

Assoc. Prof. EMRE TAŞCI

Personal Information

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Education Information

Post Doctorate, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Physics, Turkey 2013 - 2015

Post Doctorate, Universidad del Pais Vasco, Faculty of Science and Technology, Condensed Matter Physics, Spain 2009 - 2012

Post Doctorate, Technische Universiteit Delft, 3mE, Materials Engineering, Netherlands 2007 - 2009

Doctorate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Fizik Bölümü, Turkey 2002 - 2007

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Fizik Bölümü, Turkey 2000 - 2002

Undergraduate, Istanbul Technical University, Fen-Edebiyat, Fizik Mühendisliği, Turkey 1994 - 2000

Foreign Languages

Spanish, B1 Intermediate

English, C2 Mastery

Dissertations

Doctorate, Generation and simulations of nanostructures of cage structures, Orta Doğu Teknik Üniversitesi, Risk Analizi A.B.D., Fizik (Dr), 2007

Postgraduate, Simulation of the casimir effect for various geometries, Orta Doğu Teknik Üniversitesi, Risk Analizi A.B.D., Fizik (YI) (Tezli), 2002

Research Areas

Computer Sciences, algorithms, Simulation and Modelling, Computational Model, Metallurgical and Materials Engineering, Material science and engineering, Electrical and Magnetic Properties, Statistics, Statistical Analysis and Applications, Physics, Atomic and Molecular Physics, Mechanical control of atoms, molecules and ions, Atomic and Molecular Interactions, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Equations of State, Phase Equilibria, and Phase Transitions, Structure of Liquids and Solids; Crystallography, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Electronic structure of bulk material, Magnetic Properties and Materials, Natural Sciences, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Hacettepe University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2020 - Continues

Assistant Professor, Hacettepe University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2018 - 2020
Assistant Professor, Hacettepe Üniversitesi, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2015 - 2018
Researcher, Middle East Technical University, Faculty Of Arts And Sciences, Department Of Physics, 2013 - 2015
Researcher, Universidad del Pais Vasco, Bilim Ve Teknoloji Fakültesi (Fct), Yoğun Madde Fiziği, 2009 - 2012
Researcher, Technische Universiteit Delft, Malzeme, Denizcilik, Makine Fakültesi (3Me), Malzeme Mühendisliği, 2007 - 2009
Research Assistant, Orta Doğu Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, 2000 - 2007

Academic and Administrative Experience

Deputy Head of Department, Hacettepe University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, 2016 - 2019

Courses

Programming II, Undergraduate, 2019 - 2020
Programming I, Undergraduate, 2019 - 2020
Numerical Analysis, Undergraduate, 2018 - 2019
Scientific and Technical Calculations, Undergraduate, 2015 - 2016, 2016 - 2017, 2017 - 2018, 2018 - 2019
FİZ475 - MÜHENDİSLİK FİZİĞİNDE TASARIM, Undergraduate, 2016 - 2017
FİZ432 - BİTİRME ÇALIŞMASI, Undergraduate, 2016 - 2017
FİZ107, Undergraduate, 2016 - 2017
FİZ137 - FİZİK I, Undergraduate, 2016 - 2017
FİZ371 - BİLİMSEL VE TEKNİK HESAPLAMALAR, Undergraduate, 2016 - 2017
FİZ103 - FİZİK LABORATUVARI I, Undergraduate, 2016 - 2017

Advising Theses

Taşcı E., CLASSIFICATION OF THE GLASERITE STRUCTURES FAMILY BY MEANS OF GROUP THEORY, Postgraduate, S.ALBAY(Student), 2019
Erkoç Ş., Taşcı E., Investigation of InP and SiGe nanomaterials via molecular dynamics simulations, Doctorate, N.NAYİR(Student), 2018
TAŞCI E., Desarrollo para el Bilbao Crystallographic Server de programas relacionados con los Grupos Espaciales Magnéticos y las Reglas de Extinción Magnética, Postgraduate, S.Vidal(Student), 2011

Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **The site-symmetry induced representations of layer groups on the Bilbao Crystallographic Server**
de la Flor G., Orobengoa D., Evarestov R. A. , Kitaev Y. E. , TAŞCI E., Aroyo M. I.
JOURNAL OF APPLIED CRYSTALLOGRAPHY, vol.52, pp.1214-1221, 2019 (Journal Indexed in SCI)
- II. **Automatic calculation of symmetry-adapted tensors in magnetic and non-magnetic materials: a new tool of the Bilbao Crystallographic Server**
Gallego S. V. , Etxebarria J., Elcoro L., TAŞCI E., Manuel Perez-Mato J.
ACTA CRYSTALLOGRAPHICA A-FOUNDATION AND ADVANCES, vol.75, pp.438-447, 2019 (Journal Indexed in SCI)
- III. **RESOLUTION OF CRYSTALLOGRAPHIC PROBLEMS USING THE BILBAO CRYSTALLOGRAPHIC SERVER**
de la Flor G., TAŞCI E., Elcoro L., Madariaga G., Perez-Mato J. M. , Aroyo M. I.
ACTA CRYSTALLOGRAPHICA A-FOUNDATION AND ADVANCES, vol.75, 2019 (Journal Indexed in SCI)
- IV. **Crystallography online by the bilbao crystallographic server**
Martin G. D. L. F. , TAŞCI E., Elcoro L., Vidal S., Madariaga G., Manuel Perez-Mato J., Aroyo M. I.

ACTA CRYSTALLOGRAPHICA A-FOUNDATION AND ADVANCES, vol.73, 2017 (Journal Indexed in SCI)

- V. **MAGNDATA: towards a database of magnetic structures. II. The incommensurate case**
Gallego S. V. , Perez-Mato J. M. , ELCORO L., TAŞCI E., Hanson R. M. , Aroyo M. I. , MADARIAGA G.
JOURNAL OF APPLIED CRYSTALLOGRAPHY, vol.49, pp.1941-1956, 2016 (Journal Indexed in SCI)
- VI. **MAGNDATA: towards a database of magnetic structures. I. The commensurate case**
Gallego S. V. , Manuel Perez-Mato J., ELCORO L., TAŞCI E., Hanson R. M. , MOMMA K., Aroyo M. I. , MADARIAGA G.
JOURNAL OF APPLIED CRYSTALLOGRAPHY, vol.49, pp.1750-1776, 2016 (Journal Indexed in SCI)
- VII. **Symmetry conditions for type II multiferroicity in commensurate magnetic structures**
Perez-Mato J. M. , Gallego S. V. , ELCORO L., Tasci E., Aroyo M. I.
JOURNAL OF PHYSICS-CONDENSED MATTER, vol.28, no.28, 2016 (Journal Indexed in SCI)
- VIII. **Comparison of structures applying the tools available at the Bilbao Crystallographic Server**
de la Flor G., Orobengoa D., TAŞCI E., Manuel Perez-Mato J., Aroyo M. I.
JOURNAL OF APPLIED CRYSTALLOGRAPHY, vol.49, pp.653-664, 2016 (Journal Indexed in SCI)
- IX. **High-Symmetry Phase Prediction Using Trees of Group-Supergroup Relations**
Kitaev Y. E. , Panfilov A. G. , TAŞCI E., Aroyo M. I.
PHYSICS OF THE SOLID STATE, vol.57, no.11, pp.2297-2304, 2015 (Journal Indexed in SCI)
- X. **Symmetry-Based Computational Tools for Magnetic Crystallography**
Perez-Mato J. M. , Gallego S. V. , TAŞCI E., ELCORO L., de la Flor G., Aroyo M. I.
ANNUAL REVIEW OF MATERIALS RESEARCH, VOL 45, vol.45, pp.217-248, 2015 (Journal Indexed in SCI)
- XI. **Comment on "Canonical magnetic insulators with isotropic magnetoelectric coupling"**
Perez-Mato J. M. , Gallego S. V. , Tasci E. S. , ELCORO L., Aroyo M. I.
PHYSICAL REVIEW B, vol.90, no.16, 2014 (Journal Indexed in SCI)
- XII. **A survey of the structural models proposed for PbZr_{1-x}Ti_xO₃ using mode analysis**
KOCŞİS B., Perez-Mato J. M. , Tasci E. S. , de la Flor G., Aroyo M. I.
JOURNAL OF APPLIED CRYSTALLOGRAPHY, vol.47, pp.1165-1179, 2014 (Journal Indexed in SCI)
- XIII. **Brillouin-zone database on the Bilbao Crystallographic Server**
Aroyo M. I. , Orobengoa D., de la Flor G., Tasci E. S. , Perez-Mato J. M. , WONDRATSCHEK H.
ACTA CRYSTALLOGRAPHICA SECTION A, vol.70, pp.126-137, 2014 (Journal Indexed in SCI)
- XIV. **Magnetic symmetry in the Bilbao Crystallographic Server: a computer program to provide systematic absences of magnetic neutron diffraction**
GALLEGO S., TAŞCI E., de la Flor G., Manuel Perez-Mato J., AROYO M.
JOURNAL OF APPLIED CRYSTALLOGRAPHY, vol.45, pp.1236-1247, 2012 (Journal Indexed in SCI)
- XV. **Materials databases for the computational materials scientist**
Sluiter M. H. F. , Simonovic D., Tasci E. S.
INTERNATIONAL JOURNAL OF MINERALS METALLURGY AND MATERIALS, vol.18, no.3, pp.303-308, 2011 (Journal Indexed in SCI)
- XVI. **A new computer tool at the Bilbao Crystallographic Server to detect and characterize pseudosymmetry**
Capillas C., Sururi Tasci E., de la Flor G., Orobengoa D., Manuel Perez-Mato J., Ilia Aroyo M.
ZEITSCHRIFT FÜR KRISTALLOGRAPHIE-CRYSTALLINE MATERIALS, vol.226, no.2, pp.186-196, 2011 (Journal Indexed in SCI)
- XVII. **Crystallography online: Bilbao Crystallographic Server**
Aroyo M. I. , Perez-Mato J. M. , Orobengoa D., Tasci E., de la Flor G., Kirov A.
BULGARIAN CHEMICAL COMMUNICATIONS, vol.43, no.2, pp.183-197, 2011 (Journal Indexed in SCI)
- XVIII. **Existence of a stable compound in the Au-Ge alloy system**
TAŞCI E., SLUÏTER M., PASTUREL A., JAKSE N.
PHYSICAL REVIEW B, vol.81, no.17, 2010 (Journal Indexed in SCI)
- XIX. **Structural and dynamic evolution in liquid Au-Si eutectic alloy by ab initio molecular dynamics**
PASTUREL A., Tasci E. S. , Sluiter M. H. F. , JAKSE N.
PHYSICAL REVIEW B, vol.81, no.14, 2010 (Journal Indexed in SCI)
- XX. **Liquid structure as a guide for phase stability in the solid state: Discovery of a stable compound in**

the Au-Si alloy system

Tasci E., Sluiter M. H. F., PASTUREL A., VILLARS P.

ACTA MATERIALIA, vol.58, no.2, pp.449-456, 2010 (Journal Indexed in SCI)

- XXI. **Molecular Mechanics and Molecular Dynamics Simulations of Carbon Based Nanogears**
Tasci E., ERKOÇ Ş.
JOURNAL OF COMPUTATIONAL AND THEORETICAL NANOSCIENCE, vol.6, no.4, pp.921-925, 2009 (Journal Indexed in SCI)
- XXII. **Structural Properties of Carbon Nanogears**
TAŞCI E., MALCIOĞLU B., ERKOÇ Ş.
Fullerenes Nanotubes And Carbon Nanostructures, vol.16, pp.30-39, 2008 (Journal Indexed in SCI)
- XXIII. **An algorithm for constructing various kinds of nanojunctions using zig-zag and armchair nanotubes**
Tasci E., ERKOÇ S.
JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, vol.7, pp.1653-1661, 2007 (Journal Indexed in SCI)
- XXIV. **Single wall bamboo shaped carbon nanotube A molecular dynamics and electronic study**
MALCIOĞLU B., TAŞCI E., ERKOÇ Ş.
International Journal Of Modern Physics C, vol.17, pp.187-196, 2006 (Journal Indexed in SCI)
- XXV. **Junction formation in crossed nanotubes under pressure: Molecular-dynamics simulations**
Tasci E., Malcioglu O., Erkoç A.
INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.16, no.9, pp.1371-1377, 2005 (Journal Indexed in SCI)
- XXVI. **Structural and molecular electronic properties of B N ring doped single wall carbon nanotubes**
MALCIOĞLU B., TAŞCI E., ERKOÇ Ş.
Physica E-Low-Dimensional Systems, vol.28, pp.296-308, 2005 (Journal Indexed in SCI)
- XXVII. **Stability of carbon nanotori under heat treatment: Molecular-dynamics simulations**
Tasci E., YAZGAN E., Malcioglu O., ERKOÇ Ş.
FULLERENES NANOTUBES AND CARBON NANOSTRUCTURES, vol.13, no.2, pp.147-154, 2005 (Journal Indexed in SCI)
- XXVIII. **Electronic properties of carbon nanotoroidal structures**
YAZGAN E., Tasci E., Malcioglu O., ERKOÇ Ş.
JOURNAL OF MOLECULAR STRUCTURE-THEOCHEM, vol.681, pp.231-234, 2004 (Journal Indexed in SCI)
- XXIX. **Structural and electronic properties of single-wall GaN nanotubes: semi-empirical SCF-MO calculations**
ERKOÇ Ş., Malcioglu O., Tasci E.
JOURNAL OF MOLECULAR STRUCTURE-THEOCHEM, vol.674, pp.1-5, 2004 (Journal Indexed in SCI)
- XXX. **An algorithm to generate toroidal and helical cage structures using pentagons, hexagons and heptagons**
YAZGAN E., Tasci E., Erkoç A.
INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.15, no.2, pp.267-278, 2004 (Journal Indexed in SCI)
- XXXI. **Simulation of the Casimir-Polder effect for various geometries**
Tasci E., Erkoç S.
INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.13, no.7, pp.979-985, 2002 (Journal Indexed in SCI)

Books & Book Chapters

- I. **The "How-To" Guide to Computational Crystallography**
TAŞCI E., ALESSANDRO S., DI SANTE D., GIOVANNETTI G., PICOZZI S., PEREZ MATO J. M.
in: Quantum Nanosystems Structure Properties and Interactions, Putz, Mihai V., Editor, CRC Press, 2015
- II. **Thermal Stability of Carbon Nanosystems: Molecular-Dynamics Simulations**
ERKOÇ Ş., MALCIOĞLU O. B., TAŞCI E.
in: Nanomaterials Design and Simulation, Balbuena, Perla B.; Seminario, Jorge M., Editor, Elsevier, pp.201-226, 2007

Refereed Congress / Symposium Publications in Proceedings

- I. **Materials studies by the Bilbao Crystallographic Server**
AROYO M., PEREZ MATO J. M. , ELCORO L., MADARIAGA G., VIDAL S., DE LA FLOR MARTIN G., TAŞCI E.
IUCR2017 24th Congress and General Assembly of the International Union of Crystallography, 21 - 28 August 2017, vol.73, pp.1374
- II. **Going from bottom to top and relating the intermediates Applications of computational group theory**
TAŞCI E., DELAFLOR G., Orobengoa D., PEREZMATO J. M. , AROYO M.
From Computational Biophysics to Systems Biology (CBSB2016), 23 - 25 May 2016
- III. **Sıvı Faz Epitaksi ile Tek Kristal Germanyumun Yalıtkan Üzerine Üretilmesinin Moleküler Dinamik Benzetimi ile İncelenmesi**
NAYİR N., TAŞCI E., ÖZYURT İ., YERCI S., ERKOÇ Ş.
4. Ulusal Yüksek Başarımlı Hesaplama Konferansı, Ankara, Turkey, 1 - 02 October 2015
- IV. **Symmetry based computational tools and databases for magnetic crystallography in the Bilbao Crystallographic Server**
ELCORO L., PEREZ MATO J. M. , GALLEGRO S. V. , TAŞCI E., de la Flor G., AROYO M. I.
ECM29 - 29th European Crystallographic Meeting, Rovinj, Croatia, 23 - 28 August 2015, vol.71, pp.96
- V. **SUBGROUPS A novel program in the Bilbao Crystallographic Server for the analysis of distorted structures**
PEREZ-MATO J. M. , ELCORO L., AROYO M. I. , GALLEGRO S. V. , TAŞCI E., de la Flor G.
ECM29 - 29th European Crystallographic Meeting, Rovinj, Croatia, 23 - 28 August 2015, vol.71, pp.339
- VI. **Structural Properties of Indium Phosphide Nanorods under mechanical effects and heat treatment**
NAYİR N., TAŞCI E., ERKOÇ Ş.
Collaborative Conference on 3D and Materials Research (CC3DMR), Busan, South Korea, 15 - 19 June 2015
- VII. **Optimization of seed induced lateral liquid beam epitaxy growth of germanium on insulator by molecular dynamics**
NAYİR N., TAŞCI E., ÖZYURT İ., YERCI S., ŞAKİR E.
Collaborative Conference on 3D and Materials Research (CC3DMR), Busan, South Korea, 15 - 19 June 2015
- VIII. **Hunting for Multiferroics via DFT Modelling**
TAŞCI E., POLAD S., TURAN B.
5th National Crystallographic Symposium with International Participation, Sofia, Bulgaria, 25 - 27 September 2014
- IX. **Programs and Databases for Magnetic Structures Symmetry and Applications**
GALLEGO S. V. , PEREZ MATO J. M. , LUIS E., TAŞCI E., MOIS I A., de la Flor G.
XXIV Simposio del GE3C - Cristalografía y Sostenibilidad, Bilbao, Spain, 23 - 26 June 2014
- X. **Análisis de Simetría de los Procesos IR Raman e Hyper Raman Utilizando el Bilbao Crystallographic Server**
de la Flor G., TAŞCI E., AROYO M. I. , MIHAILOVA B., PEREZ MATO J. M.
XXIV Simposio del GE3C - Cristalografía y Sostenibilidad, Spain, 23 - 26 June 2014
- XI. **Grup teorisinin yapısal faz geçişlerine uygulanması PZT örneği**
TAŞCI E., KOCSIS B., PEREZ MATO J. M. , AROYO M. I. , de la Flor G.
Yoğun Madde Fiziği - Ankara Toplantısı, Bilkent Üniversitesi, Turkey, 20 December 2013
- XII. **A survey of PbZrxTi1-xO3 structural models using symmetry mode analysis**
KOCSIS B., PEREZ MATO J. M. , TAŞCI E., AROYO M. I. , de la Flor G.
28th European Crystallography MeetingWarwick, United Kingdom, 25 - 29 August 2013, vol.69, pp.485
- XIII. **Bilbao Crystallographic Server new tools and improvements**
AROYO M. I. , PEREZ MATO J. M. , TAŞCI E., GALLEGRO S., ELCORO L., MADARIAGA G.
28th European Crystallography MeetingWarwick, United Kingdom, 25 - 29 August 2013, vol.69, pp.269-270
- XIV. **Karbonun yeni allotrop yapılarının sıcaklığa göre incelenmesi Molekül dinamiği benzetimleri**
ÖZDAMAR B., TAŞCI E., ERKOÇ Ş.
Yoğun Madde Fiziği - İzmir Toplantısı, İYTE, Turkey, 05 April 2013
- XV. **Symmetry analysis of IR Raman and high order Raman scattering phenomena on the Bilbao**

Crystallographic Server

de la Flor G., TAŞCI E., AROYO M. I. , PEREZ MATO J. M. , MIHAILOVA B.

27th European Crystallography MeetingBergen, Norway, 7 - 11 August 2012, vol.68, pp.246

- XVI. **An introduction to the tools hosted in the Bilbao Crystallographic Server**
Tasci E., de la Flor G., Orobengoa D., Capillas C., Perez-Mato J. M. , Aroyo M. I.
Conference of the Contribution of Symmetries in Condensed Matter, Presqu'ile Giens, France, 01 May 2009, vol.22
- XVII. **Further development of Brillouin zone database on the Bilbao Crystallographic Server**
de la Flor G., Orobengoa D., TAŞCI E., MOIS A., PEREZ MATO J. M.
XXII IUCr CongressMadrid, Spain, 22 - 30 August 2011, vol.67, pp.403
- XVIII. **Structure utilities hosted by the Bilbao crystallographic server**
AROYO M., TAŞCI E., de la Flor G., Orobengoa D., PEREZ MATO J. M.
XXII IUCr Congress Madrid, Spain, 22 - 30 August 2011, vol.67, pp.209-210
- XIX. **Magnetic space groups database and extinction rules for magnetic diffraction**
GALLEGO S. V. , TAŞCI E., de la Flor G., PEREZ MATO J. M. , AROYO M. I.
XXII IUCr CongressMadrid, Spain, 22 - 30 August 2011, vol.67, pp.802
- XX. **Extinction Rules for Magnetic Non Polarized Neutron Diffraction An interactive program for their systematic application**
GALLEGO S. V. , TAŞCI E., de la Flor G., PEREZ MATO J. M. , AROYO M. I.
ECNS - 5th European Conference on Neutron Scattering, Prague, 17 - 22 July 2011
- XXI. **Inference from Various Material Properties Using Mutual Information and Clustering Methods Proposal of the XML Specification as a Standard for Materials Database Query Submission and Result Retrieval**
TAŞCI E., MARCEL S.
MITS 2008 - International Symposium on Materials Database, Tsukuba, Japan, 17 - 18 July 2008

Supported Projects

TAŞCI E., Project Supported by Higher Education Institutions, Glaserit yapı ailesinin grup teorisi yoluyla sınıflandırılması ve üyeleri arasındaki olası geçiş ilişkilerin tespit edilmesi, 2015 - 2019

ÖZBEY S., AROYO M. I. , PEREZ-MATO J. M. , TAŞCI E., NESPOLO M., Project Supported by Higher Education Institutions, CRYSTR2015 - Temel Kristalografi Üzerine İkinci Balkan Okulu ve Manyetik Simetri Çalıştayı, 2015 - 2016

Memberships / Tasks in Scientific Organizations

Turkish National Crystallographic Association, Member, 2015 - Continues

Citations

Total Citations (WOS):934

h-index (WOS):12

Scholarships

2232 - Doktora Sonrası Geri Dönüş Burs Programı, TUBITAK, 2013 - 2014

Awards

TAŐCI E., ODTÜ Yılm Tezi Ödülü, ODTÜ Parlar Vakfı, July 2007