# Prof.Dr. MURAT DURANDURDU

## Kişisel Bilgiler

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## Eğitim Bilgileri

Doktora, Ohio University, College Of Science, Amerika Birleşik Devletleri 1999 - 2002
Yüksek Lisans, Virginia Polytechnic Institute and State University, College Of Engineering, Materials Science And Engineering, Amerika Birleşik Devletleri 1997 - 1999
Yüksek Lisans-Tezsiz, Rutgers, The State University of New Jersey, College Of Science, Physics, Amerika Birleşik Devletleri 1995 - 1997
Lisans, Karadeniz Teknik Üniversitesi, Fen Edebiyat Fakultesi, Fizik, Türkiye 1988 - 1992

## Yaptığı Tezler

Doktora, Polyamorphism in Semiconductors, Ohio University, College Of Science, Physics, 2002
Yüksek Lisans, Molecular Statics Simulation in Aluminum ?, Virginia Polytechnic Institute And State University, College Of Engineering , Materials Science And Engineering , 1999

## Araştırma Alanları

Fizik, Yoğun Madde 1:Yapısal, Mekanik ve Termal Özellikler , Durum yoğunluğu, faz dengesi ve faz geçişleri, Temel Bilimler

## Akademik Unvanlar / Görevler

Prof.Dr., Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Nanoteknoloji Mühendisliği, 2017 - Devam Ediyor
Prof.Dr., Charles Üniversitesi, Faculty of Science , Department of Physical and Macromolecular Chemistry, 2020 - 2021
Doç.Dr., Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Nanoteknoloji Mühendisliği, 2014 - 2017
Doç.Dr., Texas Tech University, College Of Science, Physics, 2011 - 2014
Yrd.Doç.Dr., University of Texas at El Paso, College Of Science, Physics, 2004 - 2011
Araştırma Görevlisi Dr., The University of Michigan, College Of Engineering, Materials Science And Engineering, 2002 - 2004
Araştırma Görevlisi, Ohio University, College Of Science, Physics, 1999 - 2002
Araştırma Görevlisi, Virginia Polytechnic Institute and State University, College Of Engineering, Materials Science And Engineering, 1997 - 1999
Araştırma Görevlisi, Karadeniz Teknik Üniversitesi, Fen Edebiyat Fakultesi, Fizik, 1993 - 1994

## Akademik İdari Deneyim

Anabilim/Bilim Dalı Başkanı, Abdullah Gül Üniversitesi, 2015 - 2022
Anabilim/Bilim Dalı Başkanı, Abdullah Gül Üniversitesi, İleri Malzemeler Ve Nanoteknoloji, 2015 - 2022
Bölüm Başkanı, Abdullah Gül Üniversitesi, 2015 - 2022

## SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

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IV. **Amorphous boron phosphide: An ab initio investigation**
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V. **Amorphous zircon at high pressure**
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IX. **Ab initio simulation of amorphous BC3**
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X. **Amorphous silicon triboride: A first principles study**
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XII. **Tetrahedral amorphous boron nitride: A hard material**
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XIV. **Pressure-induced amorphization, mechanical and electronic properties of zeolitic imidazolate**

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XV. **Phase transition of ZrN under pressure**
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XVI. **Hydrogenated amorphous boron nitride: A first principles study**
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XVIII. **Solute aggregation in Ca72Zn28 metallic glass**
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XIX. **Amorphous magnesium silicide**
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XX. **An in-depth investigation of Mg-Zn-Ca metallic glasses: A first principles study**
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XXIII. **Permanent densification of amorphous zinc oxide under pressure: A first principles study**
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XXV. **MgCu metallic glass**
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XXVI. **Two successive amorphous-to-amorphous phase transformations in TiO2**
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XXVIII. **Amorphous zirconia: ab initio molecular dynamics simulations**
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XXIX. **High-density amorphous phase of CdO**
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XXX. **Ferromagnetism in amorphous MgO**
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XXXI. **Nanosegregated amorphous AlBN2 alloy**
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XXXII. **Polyamorphism in Aluminum Nitride: A First Principles Molecular Dynamics Study**
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XXXIII. **n-type conductivity in Si-doped amorphous AlN: an ab initio investigation**
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XXXIV. **Pressure-induced phase transformations in amorphous arsenic**
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XXXV. **Local structure of As2O3 glass from first principles simulations**
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XXXVI. **Amorphous boron nitride at high pressure**
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XXXVII. **Hexagonal nanosheets in amorphous BN: A first principles study**
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XXXVIII. **Novel high-pressure phase of ZrO2: An ab initio prediction**
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XXXIX. **High-pressure phase transitions of TiN: an ab initio constant pressure study**
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XL. **Liquid boron and amorphous boron: An ab initio molecular dynamics study**
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XLI. **Uncovering Nanoclusters in Amorphous AlN: An Ab Initio Study**
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XLIV. **Atomic structure of amorphous Mg40Cu35Ti25 alloy: An ab initio molecular dynamics study**
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XLV. **Ab initio modeling of metallic Pd80Si20 glass**
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XLVI. **Nanoscale icosahedral packing in amorphous Mg50Ni50: An ab initio study**
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XLVII. **Nanosize icosahedral quasicrystal in Mg90Ca10 glass: An ab initio molecular dynamics study**
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JOURNAL OF CHEMICAL PHYSICS, cilt.137, sa.3, 2012 (SCI-Expanded)

XLVIII. **Formation of Cotunnite Phase in ZrO2 under Uniaxial Stress: A First Principles Study**
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XLIX. **Formation of a two-dimensional layered structure in silica under shear stresses: An ab initio study**
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L. **Formation of a Cmcm phase in SnS at high pressure; an ab initio constant pressure study**
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LI. **Vibrational properties of amorphous germanium under pressure and its thermal expansion and Gruneisen parameters**
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LII. **Ab initio molecular dynamics study of pressure-induced phase transformation in KCl**
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LIII. **Formation of Anatase Phase in HfO2 in Tensile Stress: An Ab Initio Study**
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LV. **Pressure-induced phase transformation of BaS: An ab initio constant pressure study**
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LVI. **First principles study of structural phase stability of wide-gap semiconductors MgTe, MgS and MgSe**
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LVII. **Expanded phase of ZrO2: An ab initio constant-pressure study**
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LVIII. **New transformation mechanism for a zinc-blende to rocksalt phase transformation in MgS**
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LIX. **Fcc-to-bct phase transformation of aluminum under triaxial stresses: an ab initio constant pressure study**
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LX. **Pressure-induced phase transition in AlN: An ab initio molecular dynamics study**
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JOURNAL OF ALLOYS AND COMPOUNDS, cilt.480, sa.2, ss.917-921, 2009 (SCI-Expanded)

LXI. **Formation of an anataselike phase in silica under anisotropic stress: An ab initio constant-pressure study**
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LXII. **High-density amorphous phase of GeS2 glass under pressure**
Durandurdu M.
PHYSICAL REVIEW B, cilt.79, sa.20, 2009 (SCI-Expanded)

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Oezturk H., Durandurdu M.

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LXIV. **The structural phase transition of ZnSe under hydrostatic and nonhydrostatic compressions: an ab initio molecular dynamics study**
Durandurdu M.
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LXV. **Pressure-induced phase transition of BeO**
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LXVI. **Pressure-induced phase transition in wurtzite ZnS: An ab initio constant pressure study**
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LXIX. **Phase transformation of 6H-SiC at high pressure: An ab initio constant-pressure study**
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LXX. **Diamond to beta-Sn phase transition of silicon under hydrostatic and nonhydrostatic compressions**
Durandurdu M.
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LXXI. **New B2O3 crystals predicted from concurrent molecular dynamics simulations and first-principles calculations**
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Durandurdu M.
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LXXIII. **Ab initio simulations of the structural phase transformation of 2H-SiC at high pressure**
Durandurdu M.
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LXXIV. **Transformation pathways of silica under high pressure**
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LXXIX. **Ab initio simulation of polyamorphic phase transition in hydrogenated silicon**
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LXXXIII. **Structural phase transition of germanium under uniaxial stress: An ab initio study**
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LXXXVII. **Pressure-induced structural phase transition of paracrystalline silicon**
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## Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

I. **Derivative Structures of Closo Boron Hydride Cluster, B16X16:A DFT Study**
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II. **CMCM INTERMEDIATE PHASE FOR THE HCP-TO-BCC PHASE TRANSITION IN MAGNESIUM**
DURANDURDU M., Çetin A. Ö., Üçhöyük T. A.

3.ULUSLARARASI MALZEME BILIMI VE TEKNOLOJISI KONFERANSI (KAPADOKYA), 17 - 19 Eylül 2018

III. **Stability Investigation of B16H162- Derivatives by DFT Calculations**
TAHAOĞLU D., DURANDURDU M.
International Conference on Materilas Science and Technology in Cappadocia, 17 - 19 Eylül 2018

IV. **Effects of Production Methods on Structural and Mechanical Properties for Metallic Ca72Zn28 Glass-A DFT Study**
TAHAOĞLU D., DURANDURDU M.
The Internatınonal Conference On Materials Science Mechanical And Automation Engineerings And Technology (IMSMATEC'18), 10 - 12 Nisan 2018

V. **Polyamorphism in TiO2**
DURANDURDU M.
ncon-International Congress on Chemistry and Materials Science, 5 - 07 Ekim 2017

VI. **Metallic Ca72Zn28 Glass from First Principle Molecular Dynamics Simulations**
TAHAOĞLU D., DURANDURDU M.
International Congress on Chemistry and Materials Science, Ankara, Türkiye, 5 - 07 Ekim 2017

VII. **Investigation of Phase Transformation of Amorphous Zinc Oxide under Pressure: a DFT Study**
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Türk Fizik Derneği 33. Uluslararası Fizik Kongresi, Bodrum, Türkiye, 6 - 10 Eylül 2017

VIII. **POLYAMORPHIC PHASE TRANSITION IN ALUMINUM NITRIDE**
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IX. **Hidden Nanoclusters in Amorphous AlN A First Principles Study**
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## Desteklenen Projeler

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DURANDURDU M., ERKARTAL M., Yükseköğretim Kurumları Destekli Proje, Kristal Kusur Mühendisliği ile Metal-Organik Kafes Yapıların (MOF) Karbondioksit (CO2) Yakalama ve Depolama Özelliklerinin İyileştirilmesi, 2017 - 2019
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DURANDURDU M., Diğer Resmi Kurumlarca Desteklenen Proje, Pressure-induced phase transformation of metallic glasses, 2010 - 2011
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## Bilimsel Dergilerdeki Faaliyetler

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## Bilimsel Hakemlikler

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## Metrikler

Yayın: 102
Atıf (WoS): 828
Atıf (Scopus): 799

H-İndeks (WoS): 15
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## Kongre ve Sempozyum Katılımı Faaliyetleri

APS March Meeting, Katılımcı, Indiana, Amerika Birleşik Devletleri, 2002

## Davetli Konuşmalar

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