

Prof. Dr. MURAT DURANDURDU

Kişisel Bilgiler

E-posta: murat.durandurdu@agu.edu.tr

Web: <http://people.agu.edu.tr/muratdurandurdu/>

Uluslararası Araştırmacı ID'leri

ORCID: 0000-0001-5636-3183

Yoksis Araştırmacı ID: 214860

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 Fakültesi, 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 Fakültesi, 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

- I. **Amorphous boron carbonitride (BC₄N) from ab initio simulations**
Durandurdu M.
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- II. **Amorphous Silicon Nanoparticles and Silicon Nanoglasses from Ab Initio Simulations**
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Silicon, cilt.16, sa.10, ss.4263-4271, 2024 (SCI-Expanded)
- III. **Amorphous GaN: Polyamorphism and crystallization at high pressure**
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- IV. **Amorphous carbon nitride (C₃N₄)**
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- V. **Structural and electronic transformations of GeSe₂ glass under high pressures studied by X-ray absorption spectroscopy**
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Proceedings of the National Academy of Sciences of the United States of America, cilt.121, sa.14, 2024 (SCI-Expanded)
- VI. **Amorphous to amorphous phase transformation in boron-rich amorphous silicon borides: an ab initio study**
Karacaoğlan A. Ö. Ç., Durandurdu M.
High Pressure Research, cilt.44, sa.4, ss.443-456, 2024 (SCI-Expanded)
- VII. **Ab initio study of boron-rich amorphous boron carbides**
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- VIII. **Possible boron-rich amorphous silicon borides from ab initio simulations**
Karacaoğlan A. Ö. Ç., DURANDURDU M.
Journal of Molecular Modeling, cilt.29, sa.4, 2023 (SCI-Expanded)
- IX. **Boron-rich amorphous boron oxides from ab initio simulations**
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- X. **Amorphous BC₅ from first principles calculations**
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JOURNAL OF NON-CRYSTALLINE SOLIDS, cilt.592, 2022 (SCI-Expanded)
- XI. **Theoretical investigation of substituent effects on the relative stabilities and electronic structure of [BnXn](2-) clusters**
TAHAOĞLU D., ALKAN F., DURANDURDU M.
JOURNAL OF MOLECULAR MODELING, cilt.27, sa.12, 2021 (SCI-Expanded)
- XII. **Formation of a very high-density amorphous phase of carbon and its crystallization into a simple cubic structure at high pressure**
DURANDURDU M.
COMPUTATIONAL MATERIALS SCIENCE, cilt.200, 2021 (SCI-Expanded)

- XIII. **Amorphous boron phosphide: An ab initio investigation**
BOLAT S., Durandurdu M.
JOURNAL OF NON-CRYSTALLINE SOLIDS, cilt.570, 2021 (SCI-Expanded)
- XIV. **Amorphous zircon at high pressure**
BOLAT S., DURANDURDU M.
JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS, cilt.153, 2021 (SCI-Expanded)
- XV. **A first principles study of amorphous and crystalline silicon tetraboride**
Karacaoglu A. O., DURANDURDU M.
MATERIALS CHEMISTRY AND PHYSICS, cilt.258, 2021 (SCI-Expanded)
- XVI. **Stoichiometric amorphous boron carbide (BC)**
Yildiz T. A., DURANDURDU M.
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- XVII. **Amorphous silicon hexaboride at high pressure**
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PHILOSOPHICAL MAGAZINE, cilt.100, sa.14, ss.1818-1833, 2020 (SCI-Expanded)
- XVIII. **Ab initio simulation of amorphous BC₃**
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- XIX. **Amorphous silicon triboride: A first principles study**
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- XX. **High pressure modifications in amorphous boron suboxide: An ab initio study**
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- XXI. **Amorphous boron carbide from ab initio simulations**
Yildiz T. A., DURANDURDU M.
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- XXII. **Tetrahedral amorphous boron nitride: A hard material**
DURANDURDU M.
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- XXIII. **Pressure-induced amorphization, mechanical and electronic properties of zeolitic imidazolate framework (ZIF-8)**
ERKARTAL M., DURANDURDU M.
MATERIALS CHEMISTRY AND PHYSICS, cilt.240, 2020 (SCI-Expanded)
- XXIV. **Phase transition of ZrN under pressure**
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- XXV. **Hydrogenated amorphous boron nitride: A first principles study**
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- XXVI. **Amorphous zirconia at high pressure**
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- XXVII. **Solute aggregation in Ca₇₂Zn₂₈ metallic glass**
TAHAOĞLU D., DURANDURDU M.
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- XXVIII. **Amorphous magnesium silicide**
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- XXIX. **An in-depth investigation of Mg-Zn-Ca metallic glasses: A first principles study**
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- COMPUTATIONAL MATERIALS SCIENCE, cilt.153, ss.326-337, 2018 (SCI-Expanded)
- XXX. **Pressure-Induced Amorphization of MOF-5: A First Principles Study**
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- XXXI. **Hard boron rich boron nitride nanoglasses**
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- XXXII. **Permanent densification of amorphous zinc oxide under pressure: A first principles study**
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- XXXIII. **MgCu metallic glass**
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- XXXIV. **Amorphous silicon hexaboride: a first-principles study**
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- XXXV. **Two successive amorphous-to-amorphous phase transformations in TiO₂**
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- XXXVI. **Densification of amorphous boron under pressure**
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- XXXVII. **Amorphous zirconia: ab initio molecular dynamics simulations**
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Philosophical Magazine, cilt.97, sa.16, ss.1334-1345, 2017 (SCI-Expanded)
- XXXVIII. **High-density amorphous phase of CdO**
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Journal of Non-Crystalline Solids, cilt.463, ss.64-67, 2017 (SCI-Expanded)
- XXXIX. **Ferromagnetism in amorphous MgO**
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PHILOSOPHICAL MAGAZINE, cilt.97, sa.24, ss.2129-2141, 2017 (SCI-Expanded)
- XL. **Nanosegregated amorphous AlBN₂ alloy**
DURANDURDU M.
Philosophical Magazine, cilt.96, sa.30, ss.3200-3210, 2016 (SCI-Expanded)
- XLI. **Polyamorphism in Aluminum Nitride: A First Principles Molecular Dynamics Study**
DURANDURDU M.
JOURNAL OF THE AMERICAN CERAMIC SOCIETY, cilt.99, sa.5, ss.1594-1600, 2016 (SCI-Expanded)
- XLII. **n-type conductivity in Si-doped amorphous AlN: an ab initio investigation**
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PHILOSOPHICAL MAGAZINE, cilt.96, sa.11, ss.1110-1121, 2016 (SCI-Expanded)
- XLIII. **Pressure-induced phase transformations in amorphous arsenic**
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- XLIV. **Local structure of As₂O₃ glass from first principles simulations**
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- XLV. **Amorphous boron nitride at high pressure**
DURANDURDU M.
PHILOSOPHICAL MAGAZINE, cilt.96, sa.18, ss.1950-1964, 2016 (SCI-Expanded)
- XLVI. **Hexagonal nanosheets in amorphous BN: A first principles study**
Durandurdu M.

- JOURNAL OF NON-CRYSTALLINE SOLIDS, cilt.427, ss.41-45, 2015 (SCI-Expanded)
- XLVII. **Novel high-pressure phase of ZrO₂: An ab initio prediction**
Durandurdu M.
JOURNAL OF SOLID STATE CHEMISTRY, cilt.230, ss.233-236, 2015 (SCI-Expanded)
- XLVIII. **High-pressure phase transitions of TiN: an ab initio constant pressure study**
Durandurdu M.
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- XLIX. **Liquid boron and amorphous boron: An ab initio molecular dynamics study**
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- L. **Uncovering Nanoclusters in Amorphous AlN: An Ab Initio Study**
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- LI. **Atomic structure of amorphous CdO from first principles simulations**
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- LII. **New high-pressure phase of MgH₂: An ab initio constant-pressure study**
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- LIII. **Atomic structure of amorphous Mg₄₀Cu₃₅Ti₂₅ alloy: An ab initio molecular dynamics study**
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- LIV. **Ab initio modeling of metallic Pd₈₀Si₂₀ glass**
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COMPUTATIONAL MATERIALS SCIENCE, cilt.65, ss.44-47, 2012 (SCI-Expanded)
- LV. **Nanoscale icosahedral packing in amorphous Mg₅₀Ni₅₀: An ab initio study**
Tetik E., Durandurdu M., KARADAĞ F.
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- LVI. **Nanosize icosahedral quasicrystal in Mg₉₀Ca₁₀ glass: An ab initio molecular dynamics study**
Durandurdu M.
JOURNAL OF CHEMICAL PHYSICS, cilt.137, sa.3, 2012 (SCI-Expanded)
- LVII. **Formation of Cotunnite Phase in ZrO₂ under Uniaxial Stress: A First Principles Study**
Ozturk H., Durandurdu M.
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- LVIII. **Vibrational properties of amorphous germanium under pressure and its thermal expansion and Gruneisen parameters**
Durandurdu M.
JOURNAL OF NON-CRYSTALLINE SOLIDS, cilt.356, ss.977-981, 2010 (SCI-Expanded)
- LIX. **Formation of a C₂cm phase in SnS at high pressure; an ab initio constant pressure study**
Alptekin S., Durandurdu M.
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- LX. **Formation of Anatase Phase in HfO₂ in Tensile Stress: An Ab Initio Study**
Durandurdu M.
JOURNAL OF THE AMERICAN CERAMIC SOCIETY, cilt.93, sa.5, ss.1467-1469, 2010 (SCI-Expanded)
- LXI. **Ab initio molecular dynamics study of pressure-induced phase transformation in KCl**
Durandurdu M.
COMPUTATIONAL MATERIALS SCIENCE, cilt.48, sa.3, ss.672-676, 2010 (SCI-Expanded)
- LXII. **Formation of a two-dimensional layered structure in silica under shear stresses: An ab initio study**
Durandurdu M.
PHYSICAL REVIEW B, cilt.81, sa.17, 2010 (SCI-Expanded)
- LXIII. **Orthorhombic intermediate phases for the wurtzite-to-rocksalt phase transformation of CdSe: An ab**

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Durandurdu M.

CHEMICAL PHYSICS, cilt.369, ss.55-58, 2010 (SCI-Expanded)

- LXIV. **Pressure-induced phase transformation of BaS: An ab initio constant pressure study**
Durandurdu M.
CHEMICAL PHYSICS, cilt.367, ss.80-82, 2010 (SCI-Expanded)
- LXV. **First principles study of structural phase stability of wide-gap semiconductors MgTe, MgS and MgSe**
Gokoglu G., Durandurdu M., Gulseren O.
COMPUTATIONAL MATERIALS SCIENCE, cilt.47, sa.2, ss.593-598, 2009 (SCI-Expanded)
- LXVI. **Expanded phase of ZrO₂: An ab initio constant-pressure study**
Durandurdu M.
EPL, cilt.88, sa.6, 2009 (SCI-Expanded)
- LXVII. **New transformation mechanism for a zinc-blende to rocksalt phase transformation in MgS**
Durandurdu M.
JOURNAL OF PHYSICS-CONDENSED MATTER, cilt.21, sa.45, 2009 (SCI-Expanded)
- LXVIII. **Fcc-to-bct phase transformation of aluminum under triaxial stresses: an ab initio constant pressure study**
Durandurdu M.
EUROPEAN PHYSICAL JOURNAL B, cilt.72, sa.2, ss.241-245, 2009 (SCI-Expanded)
- LXIX. **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)
- LXX. **Formation of an anataselike phase in silica under anisotropic stress: An ab initio constant-pressure study**
Durandurdu M.
PHYSICAL REVIEW B, cilt.80, sa.2, 2009 (SCI-Expanded)
- LXXI. **High-density amorphous phase of GeS₂ glass under pressure**
Durandurdu M.
PHYSICAL REVIEW B, cilt.79, sa.20, 2009 (SCI-Expanded)
- LXXII. **High-pressure phases of ZrO₂: An ab initio constant-pressure study**
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- LXXIII. **The structural phase transition of ZnSe under hydrostatic and nonhydrostatic compressions: an ab initio molecular dynamics study**
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- LXXIV. **Pressure-induced phase transition in wurtzite ZnS: An ab initio constant pressure study**
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- LXXV. **Pressure-induced phase transition of BeO**
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- LXXVI. **An ab initio constant-pressure study of pressure-induced phase transition of MgSe**
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- LXXVII. **Pressure-induced phase transition of zinc-blende AlN: An ab initio molecular dynamics study**
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- LXXVIII. **Phase transformation of 6H-SiC at high pressure: An ab initio constant-pressure study**
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- LXXXIX. **Diamond to beta-Sn phase transition of silicon under hydrostatic and nonhydrostatic compressions**
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- LXXX. **New B2O3 crystals predicted from concurrent molecular dynamics simulations and first-principles calculations**
HUANG L., Durandurdu M., KIEFFER J.
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- LXXXI. **Structural phase transition of gold under uniaxial, tensile, and triaxial stresses: An ab initio study**
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- LXXXII. **Ab initio simulations of the structural phase transformation of 2H-SiC at high pressure**
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- LXXXIII. **Transformation pathways of silica under high pressure**
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- LXXXIV. **Ab initio molecular dynamics study of pressure-induced phase transition in ZnS**
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- LXXXV. **Transition pathway in GaAs under uniaxial stress: an ab initio study**
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- LXXXVI. **Electronic and mechanical properties of wurtzite type SiC nanowires**
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- LXXXVII. **Ab initio modeling of small diameter silicon nanowires**
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- LXXXVIII. **Ab initio simulation of polyamorphic phase transition in hydrogenated silicon**
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- LXXXIX. **Phase transition of GeSe2 at high pressure**
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- XC. **Cmcm phase of GeS at high pressure**
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- XCI. **Ab initio simulation of the rhombohedral-to-simple-cubic transition in arsenic**
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- XCII. **Structural phase transition of germanium under uniaxial stress: An ab initio study**
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- XCIII. **Mechanically controlled, seeded formation of a nanoscale metastable phase in ionic compounds**
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- XCIV. **Pressure-induced amorphous-to-amorphous phase transition in GaAs**
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- XCV. **High-pressure phases of amorphous and crystalline silicon**
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- PHYSICAL REVIEW B, cilt.67, sa.21, 2003 (SCI-Expanded)
- XCVI. **Pressure-induced structural phase transition of paracrystalline silicon**
Durandurdu M., DRABOLD D.
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- XCVII. **Ab initio simulation of pressure-induced low-energy excitations in amorphous silicon**
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PHYSICAL REVIEW B, cilt.66, sa.15, 2002 (SCI-Expanded)
- XCVIII. **Ab initio simulation of high-pressure phases of GaAs**
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- XCIX. **First-order pressure-induced polyamorphism in germanium**
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- C. **Simulation of pressure-induced polyamorphism in a chalcogenide glass GeSe₂**
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- CI. **Ab initio simulation of first-order amorphous-to-amorphous phase transition of silicon**
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- CII. **Approximate ab initio calculations of electronic structure of amorphous silicon**
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Hakemli Bilimsel Toplantılarda Yayımlanmış Bildiriler

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TAHAOĞLU D., DURANDURDU M.
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- II. **CMCM INTERMEDIATE PHASE FOR THE HCP-TO-BCC PHASE TRANSITION IN MAGNESIUM**
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3.ULUSLARARASI MALZEME BİLİMİ VE TEKNOLOJİSİ KONFERANSI (KAPADOKYA), 17 - 19 Eylül 2018
- III. **Stability Investigation of B₁₆H₁₆- 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**
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