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Education Information

Yildiz Technical University, Fen Edebiyat Fakültesi, Fizik, Turkey Continues

Research Areas

Physics, General Physics, Statistical physics, thermodynamic and nonlinear dynamic systems, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Thermal Properties of Condensed Matter, Natural Sciences

Academic Titles / Tasks

Research Assistant, Yildiz Technical University, Faculty Of Arts & Science, Department Of Physics, 1998 - Continues

Published journal articles indexed by SCI, SSCI, and AHCI

- I. Molecular dynamics and integral equation study of the structure and dynamics of solid and liquid magnesium phosphide
Aydin Y., GÜNAY S. D., AKDERE Ü., TAŞSEVEN Ç.
Molecular Simulation, 2023 (SCI-Expanded)
- II. Insight into the structural, thermal and ion transport properties of solid and liquid Mg₃N₂: a model potential and NPT molecular dynamics simulation
Aydin Y., Gunay S. D., AKDERE Ü., TAŞSEVEN Ç.
MOLECULAR SIMULATION, vol.48, no.7, pp.602-609, 2022 (SCI-Expanded)
- III. Influence of repeating sequence on structural and thermal stability of crystalline domain of bombyx mori silk fibroin
Aksakal B., Akdere Ü., Günay S. D., Çağın T., Taşseven Ç.
MATERIALS RESEARCH EXPRESS, vol.6, no.12, 2019 (SCI-Expanded)
- IV. Ordering and diffusion in liquid magnesium antimonide (Mg₃Sb₂) from hypernetted-chain theory and molecular dynamics simulation
AKDERE Ü., GÜNAY S. D., TASSEVEN Ç.
Ionics, vol.25, no.6, pp.2711-2717, 2019 (SCI-Expanded)
- V. Thermal expansion and heat capacities of AgBr and AgCl at solid and liquid phases from molecular dynamics simulation
Akdere U.
International Journal of Modern Physics B, vol.29, no.14, 2015 (SCI-Expanded)

- VI. **Hypernetted chain calculations of molten uranium dioxide: Comparison of rigid ion potentials**
 GÜNEY S. D., AKDERE Ü., TAŞSEVEN Ç.
 JOURNAL OF MOLECULAR LIQUIDS, vol.173, pp.124-129, 2012 (SCI-Expanded)
- VII. **THERMOPHYSICAL PROPERTIES OF URANIUM DIOXIDE: A MOLECULAR DYNAMICS STUDY OF SOLID AND LIQUID PHASES OF STOICHIOMETRIC UO₂**
 GÜNEY S. D., KAVANOZ H. B., AKDERE Ü., TAŞSEVEN Ç.
 INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.25, pp.3211-3223, 2011 (SCI-Expanded)
- VIII. **MOLECULAR DYNAMICS SIMULATION OF UO₂: AN ALTERNATIVE RIGID ION MODEL POTENTIAL**
 GÜNEY S. D., AKDERE Ü., KAVANOZ H. B., TAŞSEVEN Ç.
 INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.25, no.9, pp.1201-1210, 2011 (SCI-Expanded)
- IX. **Freezing in halide salts**
 AKDERE Ü., Yilmaz M., Kavanoz H. B., Taşseven Ç.
 ACTA PHYSICA POLONICA A, vol.113, no.6, pp.1659-1670, 2008 (SCI-Expanded)

Articles Published in Other Journals

- I. **Thermophysical Properties of Anti-Parallel β -Sheets with Bombyx mori Silk Nanostructures [Gly-Ser-Gly-Ala-Gly-Ala]_n and [Gly-Ala]_n**
 Aksakal B., Günay S. D., Akdere Ü., Çağın T., Taşseven Ç.
 materials science forum, vol.856, pp.70-73, 2016 (Scopus)
- II. **Thermomechanical properties of anti-parallel β -sheets with Bombyx mori silk nano structures [Gly-Ser-Gly-Ala-Gly-Ala]_n and [Gly-Ala]_n**
 Akdere Ü., Aksakal B., Günay S. D., Taşseven Ç., Çağın T.
 Materials Science Forum, vol.851, pp.74-77, 2016 (Scopus)
- III. **Classical Molecular Dynamics Simulation of Mg₃Bi₂ at Solid and Liquid Phase**
 GÜNEY S. D., Kayadibi F., Akdere Ü., Taşseven Ç.
 Balkan Physics Letters, vol.15, pp.151013, 2009 (Peer-Reviewed Journal)
- IV. **The Structure and Ionic Transport of Liquid Semiconductor NiTe**
 Akdere Ü., Günay S. D., Kavanoz H. B., Taşseven Ç.
 Balkan Physics Letters, vol.15, pp.1-7, 2009 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **THERMOPHYSICAL PROPERTIES OF NANO-CRYSTALLITE MAGNESIUM NITRIDE VIA MOLECULAR DYNAMICS SIMULATION AT CONSTANT PRESSURE**
 Aydin Y., Akdere Ü., Günay S. D., Taşseven Ç.
 TURKISH PHYSICAL SOCIETY 35 INTERNATIONAL PHYSICS CONGRESS, Muğla, Turkey, 4 - 08 September 2019,
 pp.351
- II. **NVE SIMULATION AND HYPERNETTED-CHAIN CALCULATION OF THE SUPERIONIC CONDUCTOR LITHIUM NITRIDE**
 Akdere Ü., Günay S. D.
 TURKISH PHYSICAL SOCIETY 35 INTERNATIONAL PHYSICS CONGRESS, Muğla, Turkey, 4 - 08 September 2019,
 pp.207
- III. **INTERACTION POTENTIAL AND LOCAL STRUCTURE OF LIQUID MAGNESIUM NITRIDE VIA HYPERNETTED-CHAIN THEORY**
 Aydin Y., Akdere Ü., Günay S. D., Taşseven Ç.
 TURKISH PHYSICAL SOCIETY 35 INTERNATIONAL PHYSICS CONGRESS, Muğla, Turkey, 4 - 08 September 2019,
 pp.342
- IV. **Static Structure and Ionic Diffusion of Liquid Magnesium Nitrate**

- AKDERE Ü., Aydin Y., GÜNEY S. D., TAŞSEVEN Ç.
 ICSEEC: SUSTAINABLE ENERGY AND ENERGY CALCULATIONS, Muğla, Turkey, 12 April 2019, pp.49
- V. **Simulation of Pullout Test on Crystallite Segment of Antiparallel beta-Sheets of Bombyx Mori Silk Fibroin**
 Uğuz C., AKDERE Ü., GÜNEY S. D., TAŞSEVEN Ç.
 ICSEEC: SUSTAINABLE ENERGY AND ENERGY CALCULATIONS, Muğla, Turkey, 12 April 2019, pp.17
- VI. **Hydrogen Bond Analysis of Bombyx Mori Silk Fibroin by MD Simulation at Room Temperature**
 Akdere Ü., Günay S. D., Taşseven Ç.
 Turkish Physical Society 34 International Physics Congress, Muğla, Turkey, 5 - 09 September 2018, pp.474
- VII. **Simulations of Mechanical Properties of Crystalline Units of Bombyx Mori Silkworm Silk**
 Akdere Ü., Uğuz C.
 Turkish Physical Society 34 International Physics Congress, Muğla, Turkey, 5 - 09 September 2018, pp.297
- VIII. **Hydrogen Bond Analysis of Bombyx Mori Silk Fibroin by MD Simulation at Room Temperature**
 AKDERE Ü., GÜNEY S. D., TAŞSEVEN Ç.
 Turkish Physical Society 34rd International Physics Congress, 5 - 09 September 2018
- IX. **Structural phase transition of Mg₃As₂**
 AKDERE Ü., GÜNEY S. D., TAŞSEVEN Ç.
 Turkish Physical Society 33rd International Physics Congress, Muğla, Turkey, 6 - 10 September 2017
- X. **Temperature dependence of mechanical properties of anti-parallel beta sheets with bombyx-mori silk nano structures along chain direction**
 AKDERE Ü., GÜNEY S. D., AKSAKAL B., Çağın T., TAŞSEVEN Ç.
 Turkish Physical Society 33rd International Physics Congress, Muğla, Turkey, 6 - 10 September 2017
- XI. **Polar/Antipolar - Antiparallel beta sheets of bombyx mori silk nano crystallites solvated in different type of water**
 Uğuz C., TAŞSEVEN Ç., GÜNEY S. D., AKDERE Ü.
 JAPMED 10, İzmir, Turkey, 4 - 08 July 2017
- XII. **Low- and high- temperature structural analysis of magnesium antimonide**
 GÜNEY S. D., AKDERE Ü., TAŞSEVEN Ç.
 1st International Conference on Energy and Thermal Engineering, ICTE 2017, İstanbul, Turkey, 25 - 28 April 2017
- XIII. **Analysis of Mechanical Behavior of Anti Parallel Beta Sheets with Bombyx Mori Silk Nano Structures Along Inter Sheet Direction**
 Akdere Ü., Günay S. D., Aksakal B., Çağın T., Taşseven Ç.
 Turkish Physical Society 32th International Physics Conference, Muğla, Turkey, 6 - 09 September 2016
- XIV. **Thermomechanical properties of anti parallel sheets with Bombyx mori silk nano structures Gly Ser Gly Ala Gly Ala n and Gly Ala n**
 Günay S. D., Akdere Ü., Aksakal B., Çağın T., Taşseven Ç.
 The Ninth Japanese -Mediterranean Workshop On Applied Electromagnetic Engineering For Magnetic, Superconducting, Multifunctional And Nanomaterials (JAPMED'9), Sofija, Bulgaria, 5 - 08 July 2015, pp.51-52
- XV. **Thermophysical properties of anti parallel sheets with Bombyx mori silk nano structures Gly Ser Gly Ala Gly Ala n and Gly Ala n**
 Aksakal B., Günay S. D., Akdere Ü., Çağın T., Taşseven Ç.
 The Ninth Japanese -Mediterranean Workshop On Applied Electromagnetic Engineering For Magnetic, Superconducting, Multifunctional And Nanomaterials (JAPMED'9), Sofija, Bulgaria, 5 - 08 July 2015, pp.25-26
- XVI. **Thermophysical Properties of alpha-Pu203: A New Potential Model**
 GÜNEY Ş., Akgenc B., AKDERE Ü., TAŞSEVEN Ç.
 3rd International Congress on Advances in Applied Physics and Materials Science, Antalya, Turkey, 24 - 28 April 2013, vol.1569, pp.208-211
- XVII. **NPT simulation and hypernetted-chain calculations of SrCl₂**
 Akgenç B., AKDERE Ü., GÜNEY Ş., TAŞSEVEN Ç.

- 3rd International Advances in Applied Physics and Materials Science Congress, APMAS 2013, Antalya, Turkey, 24 - 28 April 2013, vol.1569, pp.15-18
- XVIII. **Thermophysical Properties of AgBr and AgCl from Molecular Dynamics Simulation**
Akdere Ü., Günay S. D., Taşseven Ç.
Turkish Physical Society 29 International Physics Congress, Muğla, Turkey, 5 - 08 September 2012, pp.524
- XIX. **Liquid State Theory of Plutonium Dioxide: Hypernetted Chain Approximation**
Akdere Ü., Akgenç B., Taşseven Ç., Günay S. D.
Turkish Physical Society 29 International Physics Congress, Muğla, Turkey, 5 - 08 September 2012, pp.628
- XX. **A Study of Low Temperature Thermal Expansion and Structural Behaviour of Stromeierite AgCuS**
Akdere Ü., Öztek H. Ö., Yilmaz M., Kavanoz H. B.
Turkish Physical Society 29 International Physics Congress, Muğla, Turkey, 5 - 08 September 2012, pp.655
- XXI. **Temperature Dependence of Ionic Diffusion of Thorium Dioxide**
Akdere Ü., Akgenç B., Günay S. D., Taşseven Ç.
Turkish Physical Society 29 International Physics Congress, Muğla, Turkey, 5 - 08 September 2012, pp.156
- XXII. **Studying Superionic Phase Transition of Plutonium Dioxide From Molecular Dynamics Simulation**
Akdere Ü., Günay S. D., Akgenç B., Taşseven Ç.
Turkish Physical Society 29 International Physics Congress, Muğla, Turkey, 5 - 08 September 2012, pp.578
- XXIII. **Thermophysical Properties of Liquid Thallium Halides (TlBr, TlCl, TlI) from Hypernetted Chain Theory**
Akdere Ü., Yilmaz M., Kavanoz H. B., Öztek H. Ö.
Turkish Physical Society 28 International Physics Congress, Muğla, Turkey, 6 - 09 September 2011, pp.825
- XXIV. **Hypernetted Chain Theory of Liquid GeO₂: Preliminary Results**
Akdere Ü., Günay S. D., Taşseven Ç.
Turkish Physical Society 28 International Physics Congress, Muğla, Turkey, 6 - 09 September 2011, pp.648
- XXV. **HNC Calculations of Thermodynamic Properties of Molten AgI**
Günay S. D., Çalışkan M., Akdere Ü., Taşseven Ç.
Turkish Physical Society 28th International Physics Conference, 6 - 09 September 2011
- XXVI. **Molecular dynamics simulation of thermal properties of Ag₃Si**
Öztek H., KAVANOZ H. B., AKDERE Ü., YILMAZ M., Taşseven Ç.
7th International Conference of the Balkan Physical Union, Alexandroupoli, Greece, 9 - 13 September 2009, vol.1203, pp.252-254
- XXVII. **Classical Molecular Dynamics Simulation of Mg₃Bi₂ at Solid and Liquid Phase**
Akdere Ü., Kayadibi F., Günay S. D., Taşseven Ç.
Turkish Physical Society 25th International Physics Congress, Muğla, Turkey, 25 - 29 August 2008, pp.176
- XXVIII. **Static Structure and Ionic Transport in Molten NiTe and NiTe₂**
GÜNEY S. D., Akdere Ü., Taşseven Ç.
Turkish Physical Society 25th International Physics Conference, 25 - 29 August 2008
- XXIX. **The structure and transport properties of β -Mg₃Bi₂ in superionic conduction and molten phase**
AKDERE Ü., GÜNEY S. D.
6TH International Conference of the Balkan Physical Union, İstanbul, Turkey, 22 August 2006 - 26 August 2007, vol.899, pp.577
- XXX. **Transport properties of uranium dioxide by molecular dynamics simulation**
Gunay S. D., Akdere U., Kavanoz B., Taşseven Ç.
International Conference on Computational Methods in Science and Engineering, Corfu, Greece, 25 - 30 September 2007, vol.2, pp.1212-1215
- XXXI. **The Static Structure of Liquid Semiconductors NiTe and NiTe₂ Preliminary Results**
GÜNEY S. D., AKDERE Ü., KOSAVALI F., TAŞSEVEN Ç.
AIP Conference Proceedings, 22 - 26 August 2006, vol.899, pp.616
- XXXII. **Equilibrium Molecular Dynamics Calculations of The Transport Properties of Molten Thallium Halides**
GÜNEY S. D., AKDERE Ü., KOSAVALI F., TAŞSEVEN Ç.

- AIP Conference Proceedings, 22 - 26 August 2006, vol.899, pp.605
- XXXIII. **Hypernetted Chain Theory and Molecular Dynamic Simulation of Static Structure and Ionic Transport in Molten UO₂ and UCl₃**
Günay S. D., Akdere Ü., Kavanoz H. B., Yılmaz M., Taşseven Ç.
Turkish Physical Society 23th Conference, Muğla, Turkey, 13 - 16 September 2005
- XXXIV. **Static Criteria for Freezing of Liquid Halide Salts**
Akdere Ü., Yılmaz M., Kavanoz H. B., Taşseven Ç.
Turkish Physical Society 23 International Physics Congress, Muğla, Turkey, 13 - 16 September 2005, pp.641
- XXXV. **The Static and Thermodynamic Properties of Molten UO₂ and UCl₃ (Preliminary Results)**
Akdere Ü., Taşseven Ç., Kavanoz H. B.
The Fifth International Conference on Chemical Physics, İstanbul, Turkey, 31 October - 01 November 2002, pp.1-2

Supported Projects

GÜNAY S. D., Aydin Y., AKDERE Ü., TAŞSEVEN Ç., Project Supported by Higher Education Institutions, Magnezyum-Azot Grubu Bileşiklerinin Bilgisayar Simülasyonu Yöntemleriyle Fiziksel Özelliklerinin İncelenmesi, 2018 - 2020
Akdere Ü., TUBITAK Project, Thermo-mechanical Properties of Silk Fibroin Fibers from Molecular Dynamics Simulation for High Performance Applications, 2016 - 2018
Akdere Ü., Taşseven Ç., GÜNAY S. D., Project Supported by Higher Education Institutions, Süperiyonik İletkenlerin Yüksek Sıcaklık Davranışları, 2003 - 2007

Metrics

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Citation (Scopus): 15
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H-Index (Scopus): 3