

Personal Information

Email: hhakan.gurel@kocaeli.edu.tr

Education Information

Doctorate, Istanbul Technical University, Bilişim Enstitüsü, Hesaplamalı Bilim Ve Mühendislik (Dr), Turkey 2005 - 2011

Post Graduate, Istanbul Technical University, Bilişim Enstitüsü, Hesaplamalı Bilim Ve Mühendislik (YI) (Tezli), Turkey 2002 - 2005

Under Graduate, İstanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Mühendisliği Bölümü, Turkey 1998 - 2002

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Nanoboyutlu Yarıiletkenlerin Yoğunluk Fonksiyoneli Kuramı ile Tasarımı ve Bilgisayar Benzetimi, İstanbul Teknik Üniversitesi, Bilişim Enstitüsü, Hesaplamalı Bilim Ve Mühendislik (Dr), 2011

Post Graduate, GaAs Tabanlı Heteroyapıların Tasarımı: 2nn sp3 Sıkı Bağlanım Bakışı, İstanbul Teknik Üniversitesi, Bilişim Enstitüsü, Hesaplamalı Bilim Ve Mühendislik (YI) (Tezli), 2005

Research Areas

Distributed Systems, Parallel Algorithms, Numerical Algorithms, Operating Systems, Soft Computing, Physics, Atomic and Molecular Physics, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties

Academic Titles / Tasks

Associate Professor, Kocaeli Üniversitesi, Teknoloji Fakültesi, Bilişim Sistemleri Mühendisliği Bölümü, 2016 - Continues
Research Assistant, İstanbul Teknik Üniversitesi, Bilişim Enstitüsü, Hesaplamalı Bilim Ve Mühendislik (Dr), 2002 - 2011

Professional Experience

TTO AŞ Yönetim Kurulu Üyesi, Kocaeli University, Teknoloji Fakültesi, Bilişim Sistemleri Mühendisliği, 2019 - Continues
Rektörlük Kalite Komisyonu Üyesi, Kocaeli University, Teknoloji Fakültesi, Bilişim Sistemleri Mühendisliği, 2019 - Continues

Assistant Director of the Institute, Kocaeli University, Fen Bilimleri Enstitüsü, 2017 - 2019

Deputy Head of Department, Kocaeli University, Teknoloji Fakültesi, Bilişim Sistemleri Mühendisliği, 2013 - 2019

Vice Dean, Kocaeli Üniversitesi, Teknoloji Fakültesi, 2014 - 2017

Fakülte Kurulu Üyesi, Kocaeli University, Teknoloji Fakültesi, Bilişim Sistemleri Mühendisliği, 2013 - 2016

Courses

Paralel ve Dağıtık Sistem Programlama, Post Graduate, 2014 - 2015, 2015 - 2016, 2019 - 2020

İŞLETİM SİSTEMLERİ, Post Graduate, 2014 - 2015, 2015 - 2016, 2016 - 2017, 2017 - 2018, 2019 - 2020
FİZİK-I, Under Graduate, 2013 - 2014, 2014 - 2015, 2015 - 2016, 2016 - 2017, 2017 - 2018, 2018 - 2019, 2019 - 2020
Bilişim Sistemleri Ve Güvenliği, Post Graduate, 2014 - 2015, 2015 - 2016, 2016 - 2017, 2017 - 2018, 2018 - 2019
Nanoteknolojiye Giriş, Under Graduate, 2016 - 2017
TEKNİK İNGİLİZCE I, Under Graduate, 2016 - 2017
FİZİK BİLİMSEL HAZIRLIK, Under Graduate, 2016 - 2017
Girişimcilik, Under Graduate, 2016 - 2017

Advising Theses

Gürel H. H. , Nanoyapı örnekleme yazılımlarında eniyilemeyi artırma yolları, Post Graduate, B.SALMANKURT(Student), 2019
Gürel H. H. , Türkiye'de bilgisayar mühendisliği anabilim dalında hazırlanan lisansüstü tezlerin araştırma eğilimleri, Post Graduate, A.KÜRŞAD(Student), 2019

Jury Memberships

Post Graduate, Post Graduate, İstanbul Teknik Üniversitesi, December, 2019
Doctoral Examination, Doctoral Examination, İstanbul Teknik Üniversitesi, December, 2019
Post Graduate, Post Graduate, İstanbul Teknik Üniversitesi, December, 2019
Competition, KOÜ TTO 5. Ar-Ge Proje Pazarı, Kocaeli University, November, 2019
Appointment Academic Staff, Appointment Academic Staff, Kocaeli Üniversitesi, October, 2019
Post Graduate, Post Graduate, Kocaeli Üniversitesi, June, 2019
Doctoral Examination, Doctoral Examination, İstanbul Teknik Üniversitesi, May, 2019
Doctoral Examination, Doctoral Examination, İstanbul Teknik Üniversitesi, May, 2019
Post Graduate, Post Graduate, İstanbul Teknik Üniversitesi, June, 2017
Post Graduate, Post Graduate, İstanbul Teknik Üniversitesi, June, 2017
PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Gebze Teknik Üniversitesi, February, 2017
Doctoral Examination, Doctoral Examination, Gebze Teknik Üniversitesi, January, 2017

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

- **Temperature, strain and charge mediated multiple and dynamical phase changes of selenium and tellurium**
Demirci S., Gürel H. H. , Jahangirov S., Çıracı S.
Nanoscale, vol.12, pp.3249-3258, 2020 (Journal Indexed in SCI)
- **Computational aspects of nanostructures: PW vs AO calculations**
SALMANKURT B., GÜREL H. H.
FRONTIERS OF FUNDAMENTAL AND COMPUTATIONAL PHYSICS, 2019 (Journal Indexed in SCI)
- **Binding mechanisms of DNA/RNA nucleobases adsorbed on graphene under charging: first-principles van der Waals study**
GÜREL H. H. , Salmankurt B.
MATERIALS RESEARCH EXPRESS, vol.4, 2017 (Journal Indexed in SCI)
- **Tunable dynamics of a flake on graphene: Libration frequency**
Akturk O. U. , Akturk E., GÜREL H. H. , Ciraci S.
PHYSICAL REVIEW B, vol.95, 2017 (Journal Indexed in SCI)
- **Dissociative Adsorption of Molecules on Graphene and Silicene**
Gurel H. H. , Ozcelik V. O. , Ciraci S.
JOURNAL OF PHYSICAL CHEMISTRY C, vol.118, pp.27574-27582, 2014 (Journal Indexed in SCI)
- **Density functional and tight binding theories of electronic properties of II-VI heterostructures**

Gurel H. H. , Ünlü H.

MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, vol.16, pp.1619-1628, 2013 (Journal Indexed in SCI)

- **Enhanced reduction of graphene oxide by means of charging and electric fields applied to hydroxyl groups**

Gurel H. H. , Ciraci S.

JOURNAL OF PHYSICS-CONDENSED MATTER, vol.25, 2013 (Journal Indexed in SCI)

- **Effects of charging and perpendicular electric field on the properties of silicene and germanene**

Gurel H. H. , Ozcelik V. O. , Ciraci S.

JOURNAL OF PHYSICS-CONDENSED MATTER, vol.25, 2013 (Journal Indexed in SCI)

- **Self-healing of vacancy defects in single-layer graphene and silicene**

Ozcelik V. O. , Gurel H. H. , Ciraci S.

PHYSICAL REVIEW B, vol.88, 2013 (Journal Indexed in SCI)

- **Effects of charging and electric field on graphene functionalized with titanium**

Gurel H. H. , Ciraci S.

JOURNAL OF PHYSICS-CONDENSED MATTER, vol.25, 2013 (Journal Indexed in SCI)

- **Effects of Charging and Electric Field on Graphene Oxide**

Topsakal M., Gurel H. H. , Ciraci S.

JOURNAL OF PHYSICAL CHEMISTRY C, vol.117, pp.5943-5952, 2013 (Journal Indexed in SCI)

- **First principles calculations of Cd and Zn chalcogenides with modified Becke-Johnson density potential**

Gurel H. H. , Akinci O., Unlu H.

SUPERLATTICES AND MICROSTRUCTURES, vol.51, pp.725-732, 2012 (Journal Indexed in SCI)

- **Semi-empirical tight binding modelling of CdSTe/CdTe, ZnSSe/ZnSe and ZnSSe/CdSe heterostructures**

Akinci O., Gurel H. H. , Uenlue H.

THIN SOLID FILMS, vol.517, pp.2431-2437, 2009 (Journal Indexed in SCI)

- **Tight binding modeling of CdSe/ZnS and CdZnS/CdS II-VI heterostructures for solar cells: Role of d-orbitals**

Gurel H. H. , Akinci O., Ünlü H.

THIN SOLID FILMS, vol.516, pp.7098-7104, 2008 (Journal Indexed in SCI)

- **Tight binding modelling of energy band structure in nitride heterostructures**

Akinci O., Gurel H. H. , Uenlue H.

JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, vol.8, pp.540-548, 2008 (Journal Indexed in SCI)

- **Semiempirical tight-binding modelling of III-N-based heterostructures**

Gurel H. H. , Akinci O., Unlu H.

SUPERLATTICES AND MICROSTRUCTURES, vol.40, pp.588-597, 2006 (Journal Indexed in SCI)

- **Semiempirical tight binding modeling of Cd based II-VI heterostructures for solar cells**

Akinci O., Gurel H. H. , Unlu H.

THIN SOLID FILMS, vol.511, pp.684-689, 2006 (Journal Indexed in SCI)

- **Tight binding modeling of band gaps and band offsets in heterostructures**

Gurel H. H. , Akinci O., Unlu H.

COMPUTATIONAL MATERIALS SCIENCE, vol.33, pp.269-275, 2005 (Journal Indexed in SCI)

- **Modelling of bandgap and band offset properties in III-N related heterostructures**

Akinci O., Gurel H. H. , Unlu H.

SUPERLATTICES AND MICROSTRUCTURES, vol.36, pp.685-692, 2004 (Journal Indexed in SCI)

Articles Published in Other Journals

- **Modelling of Heterostructures for Low Dimensional Devices**

GÜREL H. H. , Akinci O., Ünlü H.

LOW-DIMENSIONAL AND NANOSTRUCTURED MATERIALS AND DEVICES: PROPERTIES, SYNTHESIS, CHARACTERIZATION, MODELLING AND APPLICATIONS, pp.1-47, 2016 (Refereed Journals of Other Institutions)

- **Modeling Of Heterostructures For Nanoelectronic Devices Tight Binding View**

Book & Book Chapters

- **in: Low-Dimensional and Nanostructured Materials and Devices**
Gürel H. H. , Akıncı Ö., Ünlü H.
Modelling of Heterostructures for Low Dimensional Devices, Hilmi Ünlü,Norman J. Horing,Jaroslav Dabowski, Editor, Springer, London/Berlin , Zürich, pp.1-46, 2016
- **in: Low-Dimensional and Nanostructured Materials and Devices**
Gürel H. H. , Topsakal M., Çıracı S.
Effects of Charging and Perpendicular Electric Field on Graphene Oxide, Hilmi Ünlü,Norman J. Horing,Jaroslav Dabowski, Editor, Springer, London/Berlin , Zürich, pp.261-288, 2016
- **in: Low Dimensional Semiconductor Structures: Synthesis, Characterization and Modeling**
Ünlü H., Karim M. R. , Gürel H. H. , Akıncı Ö.
Advances in Low Dimensional Semiconductor Structures, Hilmi Ünlü,Norman J. Horing, Editor, Springer, London/Berlin , Berlin, pp.1-17, 2013
- **in: Low Dimensional Semiconductor Structures: Synthesis, Characterization and Modeling**
Ünlü H., Gürel H. H. , Akıncı Ö., Karim M. R.
Modeling of Low Dimensional Semiconductor Structures, Hilmi Ünlü,Norman J. Horing, Editor, Springer, London/Berlin , Berlin, pp.19-37, 2013
- **Modeling of Heterostructure Bipolar Devices**
ÜNLÜ H., GÜREL H. H. , Akıncı Ö.
International Univerity of Sarajevo, 2010

Refereed Congress / Symposium Publications in Proceedings

- **Past and Present of High Performance Computing**
GÜREL H. H. , SALMANKURT B.
Uluslararası Marmara Fen ve Sosyal Bilimler Kongresi, 1 - 03 Kasım 2019
- **Theoretical investigation of interaction Valine molecule with Black Phosphorene**
SALMANKURT B., GÜREL H. H.
Uluslararası Marmara Fen ve Sosyal Bilimler Kongresi, 1 - 03 Kasım 2019
- **İki boyutlu nano yapılar ve bunların moleküllerle etkileşimini değiştirme yolları**
SALMANKURT B., GÜREL H. H.
IMASCON2019, 26 - 28 Nisan 2019
- **Ba2BiAu termoelektrik malzemesinin yapısal, elastik ve titreşimsel özelliklerinin kuramsal olarak incelenmesi**
SALMANKURT B., GÜREL H. H.
IMASCON2019, 26 - 28 Nisan 2019
- **Türkiyede Bilgisayar Mühendisliği Anabilim Dalında Hazırlanan Yüksek Lisans Tezlerinin Araştırma Eğilimleri**
Türkcan A. K. , GÜREL H. H.
Uluslararası Marmara Fen ve Sosyal Bilimler Kongresi, 26 Nisan 2019
- **Computational Aspects of Nanostructures: PW vs AO calculations**
Salmankurt B., GÜREL H. H.
10th Jubilee Conference of the Balkan-Physical-Union (BPU), Sofija, Bulgaria, 26 - 30 August 2018, vol.2075
- **Endüstri 4.0 : Türkiye Yeni Bir Sanayi Devrimine Hazır mı?**
GÜREL H. H.
Uluslararası Marmara Fen ve Sosyal Bilimler Kongresi, 23 - 25 Kasım 2018
- **Theoretical Investigation of Biosensing Properties of A New Two Dimensional Material**
SALMANKURT B., GÜREL H. H.

TFD34, 5 - 09 Eylül 2018

- **Physical Properties of BaAgBi: a theoretical study**

SALMANKURT B., GÜREL H. H.

TFD34, 5 - 09 Eylül 2018

- **Effects of Electric Field on the Properties of 2D Topological Insulators**

Salmankurt B., GÜREL H. H.

33rd International Physics Congress of the Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 10 September 2017, vol.1935

- **Binding Mechanism of Guanine on Blue Phosphorene**

SALMANKURT B., GÜREL H. H.

13th Nanoscience and Nanotechnology Conference, 22 - 25 Ekim 2017

- **Binding Mechanism of Guanine on Blue Phosphorene**

SALMANKURT B., GÜREL H. H.

13th Nanoscience Nanotechnology Conference, 22 - 25 Ekim 2017

- **Graphene-Based Electrochemical Biosensors for Detection of Amino Acids**

SALMANKURT B., GÜREL H. H.

Turkish Physical Society 33th International Physics Congress., 6 - 10 Eylül 2017

- **GRAPHENE-BASED ELECTROCHEMICAL BIOSENSORS FOR DETECTION OF AMINO ACIDS**

SALMANKURT B., GÜREL H. H.

Turkish physical society 33th international physics congress, 6 - 10 Eylül 2017

- **Interaction Mechanism of Biomolecules on Vacancy Defected 2D Materials**

GÜREL H. H. , Salmankurt B.

32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815

- **Modifying of Gas Adsorption on Phosphorene**

Salmankurt B., GÜREL H. H.

32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815

- **Interactions of Amino Acids with Adatoms(Ti, C,O) Decorated Graphene via Effect of Charging**

Salmankurt B., GÜREL H. H.

32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815

- **Density Functional Theory Calculations of III-N Based Semiconductors with mBJLDA**

GÜREL H. H. , Akinci O., Ünlü H.

32nd International Physics Congress of Turkish-Physical-Society (TPS), Bodrum, Turkey, 6 - 09 September 2016, vol.1815

- **Binding Mechanisms of DNA RNA nucleobases adsorbed on graphene under charging First principles vdW study**

GÜREL H. H. , Salmankurt B.

12th Nanoscience and Nanotechnology Conference, 3 - 05 Haziran 2016

- **Biological Applications Of Graphene Oxide**

GÜREL H. H. , Salmankurt B.

9th International Physics Conference of the Balkan-Physical-Union (BPU), İstanbul, Turkey, 24 - 27 August 2015, vol.1722

- **Graphene Based Biosensors**

GÜREL H. H. , Salmankurt B.

9th International Physics Conference of the Balkan-Physical-Union (BPU), İstanbul, Turkey, 24 - 27 August 2015, vol.1722

- **A Comprehensive Study on CdSe based Quantum Dots Synthesis Characterization and Computer Modeling**

ÜNLÜ H., Karim M. R. , GÜREL H. H. , Akinci Ö., YÜKSELİCİ M. H. , İnce R. Ş. , İNCE A. T.

30th European Conference on Surface Science, 31 Ağustos - 05 Eylül 2014

- **Effects of Temperature on the Optical and Dielectric Properties of CdSe Nanocrystals**

ÜNLÜ H., Karim M. R. , Aydın H., GÜREL H. H.

30th European Conference on Surface Science, 31 Ağustos - 05 Eylül 2014

- **Tight binding modeling of electronic properties of III-V based heterostructures**

Akinci O., Gurel H. H. , Ünlü H.

3rd International Symposium on Growth of III-Nitrides (ISGN), Montpellier, France, 4 - 07 July 2010, vol.8

- **Density Functional Theory of Structural and Electronic Properties of III-N Semiconductors**

Gurel H. H. , Akinci O., Ünlü H.

Conference of the E-MRS Symposium F, Strasbourg, France, 8 - 10 June 2010, vol.1292, pp.177-178

- **Temperature Dependent Size Calculations of CdSe Quantum Dots**

Karim M. R. , BAYSAL A., GÜREL H. H. , Akinci Ö., Türkoğlu A. K. , ÜNLÜ H.

6th Nanoscience and Nanotechnology Conference (NanoTR6), Turkey, 8 - 12 Haziran 2009

- **Tight binding modelling of electronic structure of GaPN/GaP, InAsN/InAs and GaAsN/GaAs heterostructures**

Akinci O., Gurel H. H. , Ünlü H.

E-MRS 2007 Spring Meeting-Symposium F Novel Gain Materials and Devices Based on III-N-V Compounds, Strasbourg, France, 28 May - 01 June 2007, vol.5, pp.478-484

- **Semiempirical tight binding modeling of electronic band structure of III-V nitride heterostructures**

Gurel H. H. , Akinci O., Ünlü H.

28th International Conference on the Physics of Semiconductors (ICPS-28), Vienna, Austria, 24 - 28 July 2006, vol.893, pp.171-172

- **Tight binding modelling of electronic band structure in conventional InGaN/GaN and dilute GaAsN/GaAs nitride heterostructures**

Gurel H. H. , Akinci O., Ünlü H.

International Conference on Superlattices, Nano-Structures and Nano-Devices, İstanbul, Turkey, 30 July - 04 August 2006, vol.4, pp.316-317

Supported Projects

GÜREL H. H. , Project Supported by Higher Education Institutions, GİYİLEBİLİR TEKNOLOJİLER VE BİR PERFORMANS ÖRNEĞİ, 2018 - 2019

GÜREL H. H. , Project Supported by Higher Education Institutions, BİR GİYİLEBİLİR TEKNOLOJİ ÖRNEĞİ: MEDİKAL AÇIL UYARI SİSTEMİ VE RENK DEĞİŞTİRME ÖZELLİĞİ İÇEREN BİLEKLİK, 2016 - 2017

GÜREL H. H. , Project Supported by Higher Education Institutions, GİYİLEBİLİR BİR ATEŞ ÖLÇER VE HASTA TAKİP SİSTEMİ İÇEREN BİR BİLEZİK, 2015 - 2016

GÜREL H. H. , Project Supported by Higher Education Institutions, Kocaeli Üniversitesi Teknoloji Transfer Ofisi Faaliyetlerinin Etkinleştirilmesi, 2014 - 2015

Activities in Scientific Journals

Kocaeli Journal Of Science and Engineering, Editor, 2017 - Continues

Memberships / Tasks in Scientific Organizations

Türk Fizik Demeği, Member, 2015 - Continues

Scientific Refereeing

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Kocaeli University, Turkey, May 2014

Tasks In Event Organizations

Gürel H. H. , Hesaplamalı Nanoteknoloji Çalıştayı, Workshop Organization, Kocaeli, Turkey, Nisan 2017 - Nisan 2017

Mobility Activity

Improving Competencies and Qualifications, Research During Graduate Education, Università degli studi di Roma Tor Vergata, Italy, 2004 - 2004

Invited Congress and Symposium Activities

EMRS Spring Meeting 2010, Moderator, Strasbourg, France, 2010 - 2010

Citations

Total Citations (WOS):380

h-index (WOS):11

Invited Talks

Ar-Ge Projelerinin Hakem Gözüyle Değerlendirilmesi, Seminar, KOÜ TTO ve Teknopark AŞ, Turkey, November 2019

Panelistlerin Paneli Semineri, Seminar, Kocaeli Üniversitesi, Turkey, December 2016

The Next Big Thing, IOT, Seminar, Kocaeli Üniversitesi, Turkey, October 2015

İki Boyutlu Balpetegi Yapısındaki Malzemelere Genel Bir Bakış: Graphene ve Silicene, Seminar, Gebze Teknik Üniversitesi, Turkey, September 2014

Awards

Gürel H. H. , İstanbul Teknik Üniversitesi Fen Edebiyat Fakültesi Fizik Mühendisliği Bölümü Birincilik Ödülü, İstanbul Teknik Üniversitesi Fen Edebiyat Fakültesi, June 2002