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Education Information

Post Doctorate, University Of Arkansas At Fayetteville, Electrical Engineering, Electrical Engineering, United States Of America 2013 - 2014

Post Doctorate, University Of Sheffield, Physics And Astronomy, Physics, United Kingdom 2006 - 2006

Post Doctorate, İhsan Doğramacı Bilkent Üniversitesi, Fen-Edebiyat Fak., Fizik, Turkey 2005 - 2006

Doctorate, Selçuk Üniversitesi, Fen Bilimleri Enstitüsü, Fizik, Turkey 2000 - 2005

Postgraduate, Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Fizik, Turkey 1995 - 1999

Undergraduate, Selçuk Üniversitesi, Fen-Edebiyat Fak., Fizik, Turkey 1990 - 1994

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, Yarıiletken Kuantum Nokta Yapıların Elektronik Özelliklerinin İncelenmesi, Selçuk Üniversitesi, Fen Bilimleri Enstitüsü, Fizik, 2005

Postgraduate, Hidrojenlenmiş Amorf Silisyum Güneş Pillerinde Fotoiletkenlik Çalışmaları, Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Fizik, 1999

Research Areas

Physics, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Electrical properties of electronic structures, interfaces, thin films and low-dimensional structures, Natural Sciences

Academic Titles / Tasks

Professor, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Nanoteknoloji Mühendisliği, 2017 - Continues

Associate Professor, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Nanoteknoloji Mühendisliği, 2012 - 2017

Associate Professor, Selçuk Üniversitesi, Fen-Edebiyat Fakültesi, Fizik, 2009 - 2012

Assistant Professor, Selçuk Üniversitesi, Fen-Edebiyat Fakültesi, Fizik, 2006 - 2009

Research Assistant PhD, Selçuk Üniversitesi, Fen-Edebiyat Fakültesi, Fizik, 2005 - 2006

Research Assistant, Selçuk Üniversitesi, Fen-Edebiyat Fakültesi, Fizik, 1998 - 2005

Academic and Administrative Experience

Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Nanoteknoloji Mühendisliği, 2012 - 2013

Abdullah Gül Üniversitesi, Fen Bilimleri Enstitüsü, 2012 - 2013

Advising Theses

ŞAHİN M., İKİ ELEKTRONLU VE ÇOK TABAKALI KÜRESEL BİR KUANTUM NOKTASININ OPTİK ÖZELLİKLERİNİN İNCELENMESİ, Doctorate, R.AYDIN(Student), 2013

ŞAHİN M., ÇOK TABAKALI CdSe/ZnS YARIİLETKEN KUANTUM NOKTA NANOKRİSTALLERİNDE EKZİTONLAR, Postgraduate, A.AKTÜRK(Student), 2013

ŞAHİN M., ORGANİK ARAYÜZEYLİ GaAs SCHOTTKY DİYODLARIN ELEKTRİKSEL KARAKTERİZASYONU, Postgraduate, F.BOY(Student), 2013

ŞAHİN M., TİP-II YARIİLETKEN KUANTUM NOKTA NANOKRİSTALLERİNDE EKZİTONLAR, Postgraduate, F.KOÇ(Student), 2013

ŞAHİN M., ÇOK TABAKALI BİR YARIİLETKEN KUANTUM NOKTASINDAKİ DONOR SAFSIZLIĞININ OPTİK ÖZELLİKLERİ, Postgraduate, H.TAŞ(Student), 2011

ŞAHİN M., ÇOK TABAKALI KUANTUM NOKTA YAPILARDA FOTOİYONLAŞMA TESİR KESİTİNİN HESAPLANMASI, Postgraduate, F.TEK(Student), 2010

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

- I. **Cadmium-Free and Efficient Type-II InP/ZnO/ZnS Quantum Dots and Their Application for LEDs**
Eren G. O. , Sadeghi S., Jalali H. B. , Ritter M., Han M., Baylam I., Melikov R., Onal A., Oz F., ŞAHİN M., et al.
ACS APPLIED MATERIALS & INTERFACES, vol.13, no.27, pp.32022-32030, 2021 (Journal Indexed in SCI)
- II. **Quantum dot and electron acceptor nano-heterojunction for photo-induced capacitive charge-transfer**
Karatum O., Eren G. O. , Melikov R., Onal A., Ow-Yang C. W. , ŞAHİN M., Nizamoglu S.
SCIENTIFIC REPORTS, vol.11, no.1, 2021 (Journal Indexed in SCI)
- III. **Cation exchange mediated synthesis of bright Au@ZnTe core-shell nanocrystals**
Sadeghi S., Melikov R., ŞAHİN M., Nizamoglu S.
NANOTECHNOLOGY, vol.32, no.2, 2021 (Journal Indexed in SCI)
- IV. **The ground state properties of two dimensional Fermi gas system confined in a potential composed of harmonic and a Gaussian terms**
GÜLVEREN B., ŞAHİN M., ATAV Ü.
CHEMICAL PHYSICS, vol.517, pp.48-53, 2019 (Journal Indexed in SCI)
- V. **Effective Neural Photostimulation Using Indium-Based Type-II Quantum Dots**
Jalali H. B. , Aria M. M. , Dikbas U. M. , Sadeghi S., Kumar B. G. , ŞAHİN M., Kavakli I. H. , Ow-Yang C. W. , Nizamoglu S.
ACS NANO, vol.12, no.8, pp.8104-8114, 2018 (Journal Indexed in SCI)
- VI. **Effect of the shell material and confinement type on the conversion efficiency of core/shell quantum dot nanocrystal solar cells**
ŞAHİN M.
JOURNAL OF PHYSICS-CONDENSED MATTER, vol.30, no.20, 2018 (Journal Indexed in SCI)
- VII. **The angular electronic band structure and free particle model of aromatic molecules: High-frequency photon-induced ring current**
Oncan M., Koc F., ŞAHİN M., KÖKSAL K.
INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.31, no.13, 2017 (Journal Indexed in SCI)
- VIII. **Effect of a buffer layer between the shell and ligand on the optical properties of an exciton and biexciton in type-II quantum dot nanocrystals**
Koc F., Koksall K., ŞAHİN M.
PHILOSOPHICAL MAGAZINE, vol.97, no.3, pp.201-211, 2017 (Journal Indexed in SCI)

- IX. **The electronic and optical properties of a triexciton in CdSe/ZnS core/shell quantum dot nanocrystals**
Akturk A., TAŞ H., Koksal K., ŞAHİN M.
PHILOSOPHICAL MAGAZINE, vol.96, no.6, pp.584-595, 2016 (Journal Indexed in SCI)
- X. **The intersubband optical properties of a two-electron quantum dot-quantum well heterostructure**
Aydin R., TAŞ H., ŞAHİN M.
SUPERLATTICES AND MICROSTRUCTURES, vol.86, pp.292-299, 2015 (Journal Indexed in SCI)
- XI. **A detailed investigation of electronic and intersubband optical properties of Al_xGa(1-x)As/Al_{0.3}Ga_{0.7}As/AlyGa1-yAs/Al_{0.3}Ga_{0.7}As multi-shell quantum dots**
Kavruk A. E. , Sahin M., Atav U.
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.47, no.29, 2014 (Journal Indexed in SCI)
- XII. **A detailed investigation of electronic and optical properties of the exciton, the biexciton and charged excitons in a multi-shell quantum dot nanocrystal**
Akturk A., Sahin M., Koc F., Erdinc A.
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.47, no.28, 2014 (Journal Indexed in SCI)
- XIII. **Electronic and optical properties of single excitons and biexcitons in type-II quantum dot nanocrystals**
Koc F., Sahin M.
JOURNAL OF APPLIED PHYSICS, vol.115, no.19, 2014 (Journal Indexed in SCI)
- XIV. **Linear and nonlinear optical properties of GaAs/Al(x)Ga1-xAs/GaAs/Al(y)Ga1-yAs multi-shell spherical quantum dot**
Kavruk A. E. , Sahin M., Koc F.
JOURNAL OF APPLIED PHYSICS, vol.114, no.18, 2013 (Journal Indexed in SCI)
- XV. **The electronic properties of a two-electron multi-shell quantum dot-quantum well heterostructure**
Aydin R., Sahin M.
JOURNAL OF APPLIED PHYSICS, vol.114, no.4, 2013 (Journal Indexed in SCI)
- XVI. **A model for the recombination and radiative lifetime of trions and biexcitons in spherically shaped semiconductor nanocrystals**
ŞAHİN M., Koc F.
APPLIED PHYSICS LETTERS, vol.102, no.18, 2013 (Journal Indexed in SCI)
- XVII. **The linear optical properties of a multi-shell spherical quantum dot of a parabolic confinement for cases with and without a hydrogenic impurity**
ŞAHİN M., Koksal K.
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.27, no.12, 2012 (Journal Indexed in SCI)
- XVIII. **The effect of dilute nitrogen on nonlinear optical properties of the InGaAsN/GaAs single quantum wells**
Koksal K., ŞAHİN M.
EUROPEAN PHYSICAL JOURNAL B, vol.85, no.10, 2012 (Journal Indexed in SCI)
- XIX. **The inter-sublevel optical properties of a spherical quantum dot-quantum well with and without a donor impurity**
Tas H., ŞAHİN M.
JOURNAL OF APPLIED PHYSICS, vol.112, no.5, 2012 (Journal Indexed in SCI)
- XX. **A detailed investigation of the electronic properties of a multi-layer spherical quantum dot with a parabolic confinement**
Akgul S., Sahin M., Koksal K.
JOURNAL OF LUMINESCENCE, vol.132, no.7, pp.1705-1713, 2012 (Journal Indexed in SCI)
- XXI. **The electronic properties of a core/shell/well/shell spherical quantum dot with and without a hydrogenic impurity**
Tas H., Sahin M.
JOURNAL OF APPLIED PHYSICS, vol.111, no.8, 2012 (Journal Indexed in SCI)
- XXII. **The photoionization cross section of a hydrogenic impurity in a multi-layered spherical quantum dot**

- ŞAHİN M., Tek F., Erdinc A.
JOURNAL OF APPLIED PHYSICS, vol.111, no.8, 2012 (Journal Indexed in SCI)
- XXIII. **Reordering orbitals of semiconductor multi-shell quantum dot-quantum well heteronanocrystals**
Sahin M., Nizamoglu S., Yerli O., Demir H. V.
JOURNAL OF APPLIED PHYSICS, vol.111, no.2, 2012 (Journal Indexed in SCI)
- XXIV. **A detailed analysis of current-voltage characteristics of Au/perylene-monoimide/n-Si Schottky barrier diodes over a wide temperature range**
Yuksel O. F. , Kus M., Simsir N., Safak H., Sahin M., Yenel E.
JOURNAL OF APPLIED PHYSICS, vol.110, no.2, 2011 (Journal Indexed in SCI)
- XXV. **Linear and nonlinear optical absorption coefficients and binding energy of a spherical quantum dot**
Cakir B., Yakar Y., Ozmen A., Sezer M. O. , Sahin M.
SUPERLATTICES AND MICROSTRUCTURES, vol.47, no.4, pp.556-566, 2010 (Journal Indexed in SCI)
- XXVI. **Third-order nonlinear absorption spectra of an impurity in a spherical quantum dot with different confining potential**
Yilmaz S., Sahin M.
PHYSICA STATUS SOLIDI B-BASIC SOLID STATE PHYSICS, vol.247, no.2, pp.371-374, 2010 (Journal Indexed in SCI)
- XXVII. **Third-order nonlinear optical properties of a one- and two-electron spherical quantum dot with and without a hydrogenic impurity**
Sahin M.
JOURNAL OF APPLIED PHYSICS, vol.106, no.6, 2009 (Journal Indexed in SCI)
- XXVIII. **Self-consistent computation of electronic and optical properties of a single exciton in a spherical quantum dot via matrix diagonalization method**
Sahin M., Nizamoglu S., Kavruk A. E. , Demir H. V.
JOURNAL OF APPLIED PHYSICS, vol.106, no.4, 2009 (Journal Indexed in SCI)
- XXIX. **The self-consistent calculation of the edge states at quantum Hall effect (QHE) based Mach-Zehnder interferometers (MZI)**
SIDDIKİ A., Kavruk A. E. , Oeztuerk T., Atav U., Sahin M., Hakioglu T.
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.40, no.5, pp.1398-1400, 2008 (Journal Indexed in SCI)
- XXX. **Photoionization cross section and intersublevel transitions in a one- and two-electron spherical quantum dot with a hydrogenic impurity**
Sahin M.
PHYSICAL REVIEW B, vol.77, no.4, 2008 (Journal Indexed in SCI)
- XXXI. **Mode structure of the L3 photonic crystal cavity**
CHALCRAFT A. R. A. , LAM S., O'BRIEN D., KRAUSS T. F. , Sahin M., SZYMANSKI D., SANVITTO D., OULTON R., SKOLNICK M. S. , FOX A. M. , et al.
APPLIED PHYSICS LETTERS, vol.90, no.24, 2007 (Journal Indexed in SCI)
- XXXII. **Excitonic condensation under spin-orbit coupling and BEC-BCS crossover**
HAKIOGLU T., Sahin M.
PHYSICAL REVIEW LETTERS, vol.98, no.16, 2007 (Journal Indexed in SCI)
- XXXIII. **Current-voltage analysis of a-Si : H Schottky diodes**
Sahin M., DURMUS H., KAPLAN R.
APPLIED SURFACE SCIENCE, vol.252, no.18, pp.6269-6274, 2006 (Journal Indexed in SCI)
- XXXIV. **Intensity and temperature dependence of photocurrent of a-Si : H Schottky diodes**
Sahin M., KAPLAN R.
CURRENT APPLIED PHYSICS, vol.6, no.1, pp.114-118, 2006 (Journal Indexed in SCI)
- XXXV. **A parabolic quantum dot with N electrons and an impurity**
GULVEREN B., ATAV U., Sahin M., TOMAK M.
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.30, pp.143-149, 2005 (Journal Indexed in SCI)
- XXXVI. **Application of the genetic algorithm to Blume-Emery-Griffiths model: Test cases**
CANKO O., Sahin M., ERDINC A.

- INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.19, no.28, pp.4229-4237, 2005 (Journal Indexed in SCI)
- XXXVII. **Quantum genetic algorithm method in self-consistent electronic structure calculations of a quantum dot with many electrons**
Sahin M., ATAV U., TOMAK M.
INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.16, no.9, pp.1379-1393, 2005 (Journal Indexed in SCI)
- XXXVIII. **Electronic structure of a many-electron spherical quantum dot with an impurity**
Sahin M., TOMAK M.
PHYSICAL REVIEW B, vol.72, no.12, 2005 (Journal Indexed in SCI)
- XXXIX. **The self-consistent calculation of a spherical quantum dot: A quantum genetic algorithm study**
Sahin M., TOMAK M.
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, vol.28, no.3, pp.247-256, 2005 (Journal Indexed in SCI)
- XL. **Series resistance calculation for Ag contacts on single crystal layered p-SnS and p-SnSe compound semiconductors in the wide temperature range**
KARADENIZ S., TUGLUOGLU N., Sahin M., SAFAK H.
MICROELECTRONIC ENGINEERING, vol.81, no.1, pp.125-131, 2005 (Journal Indexed in SCI)
- XLI. **Temperature dependence of current-voltage characteristics of Ag/p-SnS Schottky barrier diodes**
Sahin M., SAFAK H., TUGLUOGLU N., KARADENIZ S.
APPLIED SURFACE SCIENCE, vol.242, pp.412-418, 2005 (Journal Indexed in SCI)
- XLII. **Optical constants of CuInSe₂ thin films prepared by two-stage process**
YUKSEL O., SAFAK H., Sahin M., BASOL B.
PHYSICA SCRIPTA, vol.71, no.2, pp.221-224, 2005 (Journal Indexed in SCI)
- XLIII. **Temperature-dependent barrier characteristics of Ag/p-SnS Schottky barrier diodes**
KARADENIZ S., Sahin M., TUGLUOGLU N., SAFAK H.
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.19, no.9, pp.1098-1103, 2004 (Journal Indexed in SCI)
- XLIV. **Temperature-dependent barrier characteristics of Ag/p-SnSe Schottky diodes based on I-V-T measurements**
TUGLUOGLU N., KARADENIZ S., Sahin M., SAFAK H.
SEMICONDUCTOR SCIENCE AND TECHNOLOGY, vol.19, no.9, pp.1092-1097, 2004 (Journal Indexed in SCI)
- XLV. **Temperature dependence of current-voltage characteristics of Ag/p-SnSe Schottky diodes**
TUGLUOGLU N., KARADENIZ S., Sahin M., SAFAK H.
APPLIED SURFACE SCIENCE, vol.233, pp.320-327, 2004 (Journal Indexed in SCI)
- XLVI. **Efficiency of genetic algorithm and determination of ground state energy of impurity in a spherical quantum dot**
SAFAK H., Sahin M., GULVEREN B., TOMAK M.
INTERNATIONAL JOURNAL OF MODERN PHYSICS C, vol.14, no.6, pp.775-784, 2003 (Journal Indexed in SCI)
- XLVII. **Self-consistent calculation of semiconductor heterojunctions using quantum genetic algorithm**
Sahin M., TOMAK M.
INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol.16, no.26, pp.3883-3893, 2002 (Journal Indexed in SCI)
- XLVIII. **Analysis of I-V measurements on Ag/p-SnS and Ag/p-SnSe Schottky barriers**
SAFAK H., Sahin M., YUKSEL O.
SOLID-STATE ELECTRONICS, vol.46, no.1, pp.49-52, 2002 (Journal Indexed in SCI)

Articles Published in Other Journals

- I. **Applications of Genetic Algorithm to Quantum Mechanical Systems**
ŞAHİN M., TOMAK M., ATAV Ü.
Turkish Journal of Physics, vol.30, pp.253-275, 2006 (Other Refereed National Journals)

Refereed Congress / Symposium Publications in Proceedings

- I. **Shockley-Queisser Limitinin Kuantum Nanokristal Tabanlı Güneş Gözelerine Uygulanması**
ŞAHİN M.
23. Yoğun Madde Fiziği - Ankara Toplantısı, Ankara, Turkey, 22 December 2017
- II. **A Modification on Detailed-Balance Model for Quantum Dot Nanocrystal Solar Cells**
ŞAHİN M.
International Congress on Semiconductor Materials and Devices (ICSMD-2017), Konya, Turkey, 17 - 12 August 2017
- III. **PHOTOIONIZATION CROSS SECTION AND OSCILLATOR STRENGTH OF HYDROGENIC IMPURITIES IN GaAs QUANTUM BOX**
KIRAK M., YILMAZ S., ŞAHİN M.
9th INTERNATIONAL PHYSIC CONFERENCE OF THE BALKAN PEYSICAL UNION, 24 - 27 August 2015
- IV. **EFFECTS OF ELECTRIC FIELD TEMPERATURE AND PRESSURE ON THE LINEAR AND NONLINEAR OPTICAL PROPERTIES OF QUANTUM BOX**
KIRAK M., YILMAZ S., ŞAHİN M., Bağçllar D.
9th INTERNATIONAL PHYSIC CONFERENCE OF THE BALKAN PEYSICAL UNION, İstanbul, Turkey, 24 - 27 August 2015, pp.436
- V. **LINEAR AND NONLINEAR OPTICAL PROPERTIES OF A CUBIC QUANTUM DOT EFFECTS OF THE IMPURITY POSITION AND ELECTRIC FIELD EFFECTS**
KIRAK M., YILMAZ S., ŞAHİN M.
9th INTERNATIONAL PHYSIC CONFERENCE OF THE BALKAN PEYSICAL UNION, 24 - 27 August 2015

Citations

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