

Educational Background:

Academic Positions:

Publications

Research Projects

Awards, Honorary Degrees.

Administrative Responsibilities

Teaching Experiences:

MSc & PhD Thesis Supervision:

Reviwer of Journals:

Membership to Scientific Assoc...

Professor Asghar Asgari



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[University of Tabriz](#) ,
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&

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Educational Background:

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Certificate Degree	Field of Specialization	Name of Institution Attended	Date Received
Ph.D	Solid State Physics & Electronics	The University of Tabriz, Iran	2003
MSc	Solid State Physics	The University of Tabriz, Iran	1998
Bsc	Physics	The University of Tabriz, Iran	1996

Title of Post-Graduate Thesis (Supervisor):

Study of Optical Bistability in GaSe Monocrystals (**Prof. M. Kalafi**)

Title of Doctorate Thesis (Supervisor):

Study of Transport Properties of AlGaIn/GaN Heterostructure
(**Prof. M. Kalafi & Prof. L. Faraone**)

Academic Positions:

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Title of Position	Field of Specialization	Date		Name of Institution
		From	To	
Research Fellow	Microelectronics	2002	2004	University of Western Australia
Assistan Professor	Solid state Physics & electronics (Nanoelectronic)	2004	2008	University of Tabriz
Adjunct Senior Research Fellow	Microelectronics & Nanoelectronic	2004	2013	University of Western Australia
Associate Professor	Nanoelectronic & Photonics	2008	2012	University of Tabriz
Sabbatical	Nanoelectronic & Photonics	2010	2011	University of Western Australia
Professor	Nanoelectronic & Photonics	2012	-	University of Tabriz
Adjunct Professor	Microelectronics & Nanoelectronic	2013	2017	University of Western Australia

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Awards, Honorary Degrees, Medals and Positions:

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Title of Award, Medal, Position	Issuing Authority	Country	Year
Distinguished Researcher (award)	University of Tabriz	Iran	2006
Distinguished Researcher (award)	University of Tabriz	Iran	2009
Distinguished Researcher (award)	University of Tabriz	Iran	2011
Distinguished Researcher (award)	University of Tabriz	Iran	2013
Adjunct Professor	University of Western Australia	Australia	2013-

Teaching Experiences:

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Title of Course	Level	Dates		Name of Institution
		From	To	
Optical properties of Solids	PhD	2016	-	University of Tabriz
Semiconductor laser	PhD	2016	-	University of Tabriz
Photonic Crystals	Ph.D,	2011	-	University of Tabriz
Quantum theory of Solids	Ph.D,	2010	2012	University of Tabriz
Optics of Low-Dimensional Semiconductors	Ph.D,	2010	-	University of Tabriz
Photodetectors	MSc.	2009	2012	University of Tabriz
Advanced Quantum Mechanic	MSc	2007	-	University of Tabriz
Optoelectronic Devices	MSc	2007	-	University of Tabriz
Nano-electronics 1, 2	MSc	2008	2009	University of Tabriz
Nano-Physics	MSc	2007	2009	Sahand University of Technology
Semiconductor: Theory and Technology	MSc	2008	2011	University of Tabriz
Classical Physics	BSc	2005	2006	University of Tabriz
Quantum Mechanic (1,2)	BSc	2003	2007	University of Tabriz
Semiconductors Physics	BSc	2005	2007	University of Tabriz

Administrative Responsibilities

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Job Title	Place of Work	Date		Name of Institution
		From	To	
Head of Department	Photonics, Research Institute for Applied Physics,	2007	2009	University of Tabriz
Director	University of Tabriz planning and education development office	2009	2011	University of Tabriz
Director	Research Institute for Applied Physics & Astronomy	2014	Now	University of Tabriz
Secretary	East-Azarbaijan Nanotechnology Initiative Council	2014	Now	Province of East-Azarbaijan
Director	Research Center for Fundamental Science	2017	Now	University of Tabriz

Master and Doctorate Thesis Supervision:

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No	Full Name of Student	Level	Title of Thesis
70	H. Fazalipourseddigh	PhD	
69	N. Fathalizadeh	MSc	Investigation of graphene based gas sensor performance using metal nanoparticle
68	N. Khajeh Gholi	MSc	Investigation and fabrication of solar cells based on type II quantum dots
67	M. Lazemi	MSc	Efficiency enhancing of solar cells using colloidal quantum dots
66	M. Bahramnejad	MSc	Analysis of stresses in composite by shearography method using laser light
65	S. Mohammadi	MSc	Synthesis and characterization of CdS/ZnS quantum dot for the white light spectrum
64	N. Navai Baghban	MSc	Investigation of Spp in Graphene based cylindrical waveguides
63	F. Eskandarzadeh	MSc	Modeling of ultra broadband Graphene photodetector
62	A. Faizipour	MSc	Investigation of the effects of different Nano metallic Particle surface plasmon on solar cells efficiency

61	E. Solymanzad	MSc	Investigation of the effects of internal reflection in III nitride based solar cells
60	Z. Fadaei	MSc	Investigation fundamental losses in nitride based nanostructure solar cells
59	M. Helali	MSc	An Analytical Model of Dark Saturation Current of III-nitride based Solar Cell
58	N. Hosseini	MSc	Investigation of Excitons in quantum dot molecules
57	S. HaghKish	MSc	The effects of capping and barrier layers on performance of nanostructures III-nitride based LEDs
56	F. Mohammadzadeh	MSc	Investigation of gate-source and gate-drain length on performance of Graphene FET
55	S. KhubAfarin	MSc	The effect of optical properties of graphene on surface plasmon polaritons
54	M. Piralaei	PhD	Investigation of the random distribution of nanoparticles in performance of plasmonic solar cells
53	V. Mohaddesi	Ph.D	Investigation of Graphene plasmonic for THz applications
52	M. Kashiri	Ph.D	Investigation of carrier dynamics in quantum dot laser
51	T. Nemati	PhD	Theory of photovoltaic cells : new quantum formalism and application to nanostructured systems
50	N. Milani	Ph.D	Modeling of Superluminescent Light-Emitting Diodes in Semiconductor Nanostructures
49	Z. Arefnia	Ph.D	Modeling of the Graphene Solar Cells and optimizing its Conversion Efficiency
48	M. Ashkani	MSc	Investigation of Minority Carrier Lifetimes in Superlattice Photodetectors
47	N. PourAbbasAli	MSc	The effects of structural parameteres on performance of III-nitride based LEDs
46	E. Annabi Milani	MSc	The effects of capping layer on performance of III-nitride based nanostructures lasers
45	S. Safa	Ph.D	Investigation of transport properties of type II superlattices
44	M. PirAlaei	MSc	Investigation of the diffusion length and relaxation time of the mionerity carries in GaN basd solar cells
43	F. Shiri	MSc	Investigation of the dark current in graphene based IR detectors
42	I. AskarAbadi	MSc	Investigation of the optical nonlinearity in graphene nano ribbons
41	S. Jabbarpour	MSc	Investigation of the electron scattering mechnismes in III-nitide based Solar cells

40	B. Bagheri	MSc	Study of polaritonic LED in semiconductor microcavity
39	M. Emdadi	MSc	Study of photonic crystals nano-cavity with semiconductor nano-structure active region
38	L. Mohammadzade	MSc	Investigation of Exciton states in Graphene
37	P. Navaei	MSc	Modeling of Nitride based quantum dot laser-the effects of relaxation time and cavity length
36	F. SolymanNejad	MSc	Modeling of Gas Sensor based on nitride field effect Nanostructures
35	M. Bahrami	MSc	Study of Exciton state life time in III-nitride quantum dots
34	S. Saeid Nahaei	MSc	Investigation of Phonon-Exciton intraction in Semiconductor quantum dots
33	M. Alavi	MSc	Investigation of polaritonic states in Semiconductor Nano-structures
32	N. Fazli	MSc	Study of III-nitride based QD field effect transistors
31	E. Ahmadi	Ph.D	Modeling of the Infrared Graphene Photodetector and optimizing the detector parameters
30	R. Ghahramani	MSc	Investigation of THz waves Generation in Gunn diodes of nitrid materials
29	M. Ghahramani	MSc	Modeling of the Heterojunction Bipolar Transistor Lasers Based on Nitride nano-structure
28	Kh. Khalili	MSc	Modeling of III-Nitride based solar cell with high efficiency
27	S. Dashti	MSc	Optimization of Gain in nitride quantum well laser
26	H. azari	MSc	Study of Microbolometer Infrared detector parameters
25	A. Khorrami	MSc	Investigation of the genreation and detection of Terahertz waves in nitride based nanostructures
24	F. Ghasemi	MSc	Investigation of transverse structures in semiconducto microresonators above lasing threshold with nonlinear fitting of polarization
23	H. Mohammadpour	Ph.D	Investigation of transport peroperties and caharctirization of Graphene nano-ribbon FET
22	H. Solymani	MSc	Modeling of tunneling gate currents in nanoscale MOSFETs
21	Z. Arse	MSc	The study of optical absorption nonlinearty in AlGaN/GaN heterostructures
20	S. Taheri	MSc	Modeling of heat sensor in semiconductor nanostructures

19	S. Razi	MSc	The study of detectors parameters in nitride based quantum dot IR detectors
18	S. Sheshechi	MSc	The study of temperature effects on optical properties of Nitride nano structural based LEDs
17	S. Nikipar	MSc	The effects of gate miniaturizing on AlGaN/GaN high electron mobility transistors transport parameters
16	S. Mohammadi	MSc	The effects of gate-source and gate-drain distance on AlGaN/GaN high electron mobility transistors transport parameters
15	N. Sarani Azar	MSc	Capacitance in Nanostructure Nitride Semiconductors Quantum
14	S. Asadzadeh	MSc	Study of the excitonic state in semiconductor quantum dot nanostructures
13	H. Kavyani	MSc	Study of the quantum dot nanostructural shape effects on the electronic structure
12	F. Kakojobari	MSc	Study of electronic structure of quantum dots by density functional method
11	S. Shojaei	Ph.D	Study of optical properties of nitride quantum dots and their application
10	L. Rajabi	BSc	Theoretical Study of transport properties of the electrolyte gated Nitride based Nano-transistors
9	H. Babanejad	MSc	Study of Energy relaxation rate in AlGaN/GaN heterostructure
8	H. Einollahzade Samadi	MSc	Study of electric field effects on electronic structure of Nitride Quantum Dots.
7	S. Tahmasebizadeh	MSc	Modeling of AlGaN/GaN multi-Quantum Well for Fiber Optics telecommunications
6	S. Safa	MSc	Study of indirect excitons in electrostatic traps of GaN based Nano Structures.
5	S. Rahimi	MSc	Investigation of the thermal resistance in AlGaN/GaN heterostructure and related transistors
4	H. Hatami	MSc	Modeling of the Quantum Well Infrared Photodetector in range of 2-6 micrometer.
3	E. Ahmadi	MSc	Investigation of solar-blind p-i-n ultraviolet photodetector based on AlGaN
2	M. Karamad	MSc	The effect of traps on transport property of AlGaN/GaN high electron mobility transistors (HEMTs)
1	E. Nourghasemi	MSc	Investigation the effect of hot phonons on two-dimensional electron gas in AlGaN/GaN heterostructures

Publications:

A: Books

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Title	Type of Work		Publisher	Date of Publication
	Translation	Compilation		
Nano Physics	Edited		Sahand University of Technolgy	2011

B: Papers

Authors	Title of Paper	Place of Publication	Date of Publication
Z. Arefinia, <u>A. Asgari</u>	Scaling issues of Schottky junction solar cells based on graphene and silicon quantum wires in the sub-10-nm regime	Optik-International Journal for Light and Electron Optics	2017
V. Mohadesi, V. Siahpoush, <u>A. Asgari</u>	Investigation of leaky and bound modes of graphene surface plasmons	Journal of Applied Physics 122 (13), 133113	2017
S. Asgharizadeh, M. Javidnassab, <u>A. Asgari</u> , M. R. Keramaty	Variable width quantum well-based high-efficiency solar cells: an investigation in Al _{0.56} Ga _{0.44} As solar cell	J. Photon. Energy 7(1), 015502	2017
E. Namvari, S. Shojaei, <u>A. Asgari</u>	Luminescence emission from Al _{0.3} Ga _{0.7} N/GaN multi quantum disc core/shell nanowire: Numerical approach	Physica E 93,132–142	2017
B. Olyaeefar, S. Ahmadi-Kandjani, <u>A. Asgari</u>	Bulk and interface recombination in planar lead halide perovskite solar cells: A Drift-Diffusion study	Physica E 94, 118–122	2017
M. Abbaspour, B. Pourabbas, M. Azimi, G. Abdeali, <u>A. Asgari</u>	Solid-state supercapacitor based on breath figured polymethyl methacrylate deposited by graphene: the effect of electrode surface	J Mater Sci: Mater Electron http://10.1007/s10854-017-7265-z	2017
T. Nemati Aram, <u>A. Asgari</u> , M. Ernzerhof, P. Qu'emeris, D. Mayou	Quantum modeling of two-level photovoltaic systems	EPJ Photovoltaics 8 , 85503	2017
E. Annabi Milani, V. Mohadesi, <u>A. Asgari</u>	Investigating the Effects of Capping Layer on Optical Gain of Nitride Based Semiconductor Nanostructure Lasers	Optical Materials 66, 236–240	2017

TN. Aram, M. Ernzerhof, <u>A. Asgari</u> , D. Mayou	The impact of long-range electron-hole interaction on the charge separation yield of molecular photocells	The Journal of Chemical Physics 146 http://aip.scitation.org/doi/10.1063/1.4973984	2017
M. Piralaee, <u>A. Asgari</u> , V. Siahpoush	Modeling and optimizing the performance of plasmonic solar cells using effective medium theory	Physics Letters A 381, 489–493	2017
S. K. Doust, V. Siahpoush, <u>A. Asgari</u>	The Tunability of Surface Plasmon Polaritons in Graphene Waveguide Structures	Plasmonics DOI: 10.1007/s11468-016-0428-6	2016
S. Safa, <u>A. Asgari</u>	Effects of ionized impurity and interface roughness scatterings on the electron mobility in InAs/GaSb type II superlattices at low temperatures	Modern Physics Letters B 30, 1650384	2016
M. Piralaee, <u>A. Asgari</u>	Modeling of Optimum light absorption in random plasmonic solar cell using effective medium theory	Optical Materials, 62 399-402	2016
TN Aram, P Anghel-Vasilescu, <u>A. Asgari</u> , M Ernzerhof, D Mayou	Modeling of molecular photocells: Application to two-level photovoltaic system with electron-hole interaction	The Journal of Chemical Physics 145 (12), 124116	2016
S Haghkish, <u>A. Asgari</u>	The effects of cap layer thickness on the performance of InGaN/GaN MQW solar cell	arXiv preprint arXiv:1605.06816	2016
TN Aram, <u>A. Asgari</u> , Didier Mayou	Charge separation in organic solar cells: Effects of Coulomb interaction, recombination and hole propagation	Europhysics Letters (EPL), 115 , 18003	2016
M. Kashiri, <u>A. Asgari</u>	Modeling of carrier dynamics in InGaAs/GaAs self-assembled quantum dot lasers	Applied Optics Vol. 55, Issue 8, pp. 2042-2048	2016
M. Kashiri, <u>A. Asgari</u>	Evaluating the effects of nonlinear optical gain and thermal carrier escape on the performance of InGaAs/GaAs self-assembled quantum dot lasers	International Journal of Modern Physics B, July Vol. 30, No. 19, 1650121	2016
H. Mohammadpour, <u>A. Asgari</u>	Enhanced nonlocal Andreev reflection in F S F graphene spin-valve	Physica C: Superconductivity and its applications 519, 124–129	2015
S. Safa, <u>A. Asgari</u>	Vertical Transport in InAs/GaSb Superlattice at Low Temperatures	Journal of Low Temperature Physics, 181, 223-233	2015

A. Golestani, A. Khaledi-Nasab & <u>A. Asgari</u>	Phase-dependent intersubband optical properties of asymmetric AlGaAs/GaAs coupled quantum wells	Journal of Modern Optics, 63, 566-574	2015
M. Tahmasebpoura, M. Bahramia, <u>A. Asgari</u>	Design of a high figure of merit subwavelength grating based plasmonic sensor for detection of DNA hybridization	Optik 126, 2747–2751	2015
Z. Arefinia, <u>A. Asgari</u>	Performance optimization of Schottky junction solar cells based on Graphene and Semiconductor nanowires	Submitted to Energy	2015
R. Jafari, <u>A. Asgari</u>	The effects of temperature on I-V characteristics of quantum dot based optoelectronic devices	NanoScale, 4, 217-222 (in Persian)	2015
N. MoslehiMilani, V.Mohadesi, <u>A. Asgari</u>	The effects of temperature dependent recombination rates on performance of InGaN/GaN blue superluminescent light emitting diodes	PhysicaE 71, 64–69	2015
Z. Arefinia, <u>A. Asgari</u>	An analytical model for optimizing the performance of graphene based silicon Schottky barrier solar cells	Materials Science in Semiconductor Processing 35, 181-188	2015
T. NematiAram, <u>A. Asgari</u>	Influence of Fermi velocity engineering on electronic and optical properties of graphene superlattices	Physics Letters A 379. 974	2015
N. Moslehi Milani, <u>A. Asgari</u>	The effects of carrier transport phenomena on the spectral and power Characteristics of blue superluminescent light emitting diodes	Physica E 69.165	2015
Z. Arefinia, <u>A. Asgari</u>	Optical and electrical modeling of solar cells based on graphene/Si nanowires with radial p–i–n junctions	Solar EnergyMaterials&Solar Cells, 137, 146	2015
Ali Golestania, Elmira A. Milania, <u>A. Asgari</u>	Large Kerr coefficient induced by THz driven to intersubband of a GaN/AlGaIn asymmetric quantum well nanostructure	Journal of Modern Optics, 62, Issue 7, 569-575	2015
Mina Piralaee, <u>A. Asgari</u>	Investigation of the temperature dependence of Quantum Efficiency of Multijunction GaN solar cells	Iran. J. Sci. Technol. Trans. Sci. DOI: 10.1007/s40995-016-0029-4	2015

N. Moslehi Milani, V. Mohadesi, <u>A. Asgari</u>	A novel theoretical model for broadband blue InGaN/GaN superluminescent light emitting diodes	J. Appl. Phys. 117, 054502	2015
P. Navaeipour, <u>A. Asgari</u>	Fully numerical analysis of III-nitride based quantum dot lasers considering the quantum dots size distribution	Optik, 126, 119	2015
M. Tahmasebpour, M. Bahrami, <u>A. Asgari</u>	Investigation of subwavelength grating structure for enhanced surface plasmon resonance detection	APPLIED OPTICS, Vol. 53, No. 27, 6307	2014
Z. Arefinia, <u>A. Asgari</u>	A new modeling approach for graphene based silicon nanowire Schottky junction solar cells	J. Renewable Sustainable Energy. 6, 043132	2014
P. Navaeipour, <u>A. Asgari</u>	Numerical analysis of AlGaAs/GaAs multi-quantum well superluminescent diodes	Physica E, 63, 272	2014
Z. Arefinia, <u>A. Asgari</u>	Novel attributes in modeling and optimizing of the new graphene based In _x Ga _{1-x} N Schottky barrier solar cells	J. Appl. Phys. 115, 194506	2014
S. Safa, <u>A. Asgari</u> , L. Faraone	Response to “Comment on ‘A study of vertical and in-plane electron 2 mobility due to interface roughness scattering at low temperature in InAs-GaSb type-II superlattices’”	J. Appl. Phys. 115, 146101	2014
M. Tahmasebpour, M. Bahrami, <u>A. Asgari</u>	Design study of nanograting-based surface plasmon resonance biosensor in the near-infrared wavelength	APPLIED OPTICS, Vol. 53, No. 7, 1449	2014
A. A. khorrani, <u>A. Asgari</u>	Numerical simulation of performance of AlGaIn/GaN terahertz quantum cascade laser	Journal of Research on Many-body Systems Vol. 4, 8	2013
S. Safa, <u>A. Asgari</u> , L. Faraone	A study of vertical and in-plane electron mobility due to interface roughness scattering at low temperature in InAs/GaSb type-II superlattices	J. Appl. Phys. 114, 053712	2013
L. Mohammadzadeh, S. Shojaei, E. Ahmadi, <u>A. Asgari</u>	Excitonic effects of bilayer graphene: A simple approach	Optik 124, 6126– 6131	2013
<u>A. Asgari</u> L. Faraone	Thermal broadening of electron mobility distribution in AlGaIn/AlN/GaN heterostructures	J. Appl. Phys. 114, 053702	2013
Z. Arefinia, <u>A. Asgari</u>	Novel attributes in the scaling and performance considerations of the one-dimensional graphene-based photonic crystals for terahertz applications	Physica E. 54, 34-39	2013
E. Ahmadi, <u>A. Asgari</u>	Modeling of the Infrared Photodetector Based on Multi Layer Armchair Graphene Nanoribbons	J. Appl. Phys. 113, 093106	2013

H. Kaviani, <u>A. Asgari</u>	Investigation of self-focusing effects in wurtzite InGaN/GaN quantum dots	Optik, 124, 734–739	2013
E. Ahmadi, <u>A. Asgari</u>	Calculation of Third Order Susceptibility of Armchair graphene nanoribbon at near infrared wavelengths	Accepted Optik	2013
<u>A. Asgari</u> , A. A. khorrami	Modeling of GaN quantum dot terahertz cascade laser	OPTO-ELECTRONICS REVIEW, 21, 147-152	2013
E. Ahmadi, <u>A. Asgari</u>	Carrier Generation and Recombination Rate in Armchair Graphene Nanoribbons	Eur. Phys. J. B. 86, 19.1-7	2013
E. Ahmadi, <u>A. Asgari</u>	The Dark Current of the Infrared Photodetectors Based On Armchair Graphene Nanoribbons	Physica Scripta, T154, 014003	2013
S. Saeid Nahaei, S. Shojaei, <u>A. Asgari</u>	Excitonic Properties of a Spherical Semiconductor Quantum Dot: the role of phonons	Optik 124, 2561	2013
<u>A. Asgari</u> , N. Fazli	Current–voltage characteristics in III-nitride quantum dot heterostructure based high electron mobility transistors	Physica E, 46, 174	2012
E. Ahmadi, <u>A. Asgari</u> , K. Ahmadiyar	The Optical Responsivity in IR- Photodetector Based on Armchair Graphene Nanoribbons with p-i-n structure	Superlattices and Microstructures, 52, 605	2012
<u>A. Asgari</u> , L. Faraone	SiN passivation layer effects on un-gated two-dimensional electron gas density in AlGa _N /AlN/GaN field-effect transistors	Appl. Phys. Lett. 100, 122106	2012
<u>A. Asgari</u> S. Babanejad, L. Faraone	Electron mobility, Hall scattering factor, and sheet conductivity in AlGa _N /AlN/GaN Heterostructures	J. Appl. Physics. 110, 113713	2011
<u>A. Asgari</u> , A. A. khorrami	Temperature dependence of the threshold current density of a GaN based quantum dot laser	Phys. Status Solidi C 8, No. 9, 2915	2011
<u>A. Asgari</u> , S. Dashti	Optimization of Optical Gain in Al Ga _N /Ga _N /Al Ga _N Strained Quantum Well Laser	Optik 123, 1546	2012
L. Mohammadzadeh, <u>A. Asgari</u> , S. Shojaei, E. Ahmadi	Theoretical Calculation of Excitonic Binding Energies and Optical Absorption Spectra for Armchair Graphene Nanoribbons	Eur. Phys. J. B. 84, 249-253	2011
H. Mohammadpour, <u>A. Asgari</u>	Graphene Nanoribbon tunneling field effect transistors	Physica E, 46, 270	2012

H. Mohammadpour, <u>A. Asgari</u>	Numerical Study of Quantum Transport in the double-gate graphene nanoribbon field effect transistors	Physica E, 43, 1708–1711	2011
<u>A. Asgari</u> , Kh. KHalili	Temperature Dependence of InGaN/GaN Multiple Quantum Well Based High Efficiency Solar Cell	Solar Energy Materials and Solar Cells, 95, 3124	2011
E. Ahmadi, <u>A. Asgari</u>	Theoretical Calculation of Optical Absorption Spectrum for Armchair Graphene Nanoribbon	Physics Procedia 8, 25–29	2011
Kh. KHalili, <u>A. Asgari</u> , H. Movla, A. Mottaghizadeh, H. Azari	Effects of Interface Recombination on the Performance of SWCNT\GaAs Heterojunction Solar Cell	Physics Procedia 8, 274–279	2011
H. Azari <u>A. Asgari</u> Kh. KHalili, M. Kalafi	An Analytical Model for Detectivity Prediction of Uncooled Bolometer Considering all Thermal Phenomena Effects	Physics Procedia 8, 280–285	2011
<u>A. Asgari</u> S. Taheri	Modeling of Temperature Sensor Built on GaN Nanostructures	Physica E, 43, 1091	2011
S. Razi, <u>A. Asgari</u> F. Ghasemi	Modelling of high temperature GaN quantum dot infrared photodetectors	IJOP. 4, 77	2011
<u>A. Asgari</u> , S. Safa, L. Mouchliadis	The lifetime of indirect excitons in coupled AlGaIn/GaN quantum wells in an electrostatic trap	Superlattices and Microstructures, 49, 487	2011
H. Mohammadpour, <u>A. Asgari</u>	Crossed Andreev reflection in graphene Normal-Superconductor-Normal structure with pseudo-diffusive interfaces	Physics letters A, 375,1339	2011
<u>A. Asgari</u> S. Razi	High performances III-Nitride Quantum Dot infrared photodetector operating at room temperature	Optics Express, 18, 14604	2010
<u>A. Asgari</u> S. Asadzadeh	The effects of polarization fields on exciton binding energy in GaN quantum dots	Journal of Physics Conference Series 248, 012020	2010
<u>A. Asgari</u> S. Babanejad	The Scattering of Hot Electrons by Phonons in AlGaIn/GaN Quantum Dot	Journal of Physics: Conference Series 248, 012022	2010
S. Shishechi, <u>A. Asgari</u> , R. Kheradmand	The effect of temperature on the recombination rate of AlGaIn/GaN light emitting diodes	Optical and Quantum Electronics, 41, 7, 525.	2009

S. Shojaei, <u>A. Asgari</u> , M. Kalafi	Nonlinear optical properties of biexciton states in GaN quantum disks	Eur. Phys. J. B 72, 211–216	2009
<u>A. Asgari</u> , E. Ahmadi, M. Kalafi	Al _x Ga _{1-x} N/GaN Multi-Quantum Well ultraviolet detector based on p-i-n heterostructures	Microelectronics Journal, 40, 104	2009
Z. Hashempour, <u>A. Asgari</u> , S. Nikipar, M. Abolhasani, M. Kalafi	Numerical performance evaluation of AlGa _N /Ga _N high electron mobility transistors including traps and temperature effects	Physica E 41, 1517–1521	2009
H. Rasooli Saghai, <u>A. Asgari</u> , H. Baghban Asghari Nejad, A. Rostami	A study in Optical Properties of AlGa _N /Ga _N Pyramid and Prism-shape Quantum Dots	Physica E 41, 245–253	2008
S. Shojaei, F. Troiani, <u>A. Asgari</u> , M. Kalafi, G. Goldoni	Coulomb-induced nonlinearities in Ga _N microdisks	Eur. Phys. J. B 65, 505–509	2008
<u>A. Asgari</u> , M. Afshari Bavili	Capacitance–voltage characteristics of In _N quantum dots in AlGa _N /Ga _N Heterostructure	Book Chapter, Chapter 1,	2008
M. Karimi, M. Kalafi, <u>A. Asgari</u>	Numerical optimization of an extracted HgCdTe IR-photodiodes for 10.6 μm spectral region operating at room temperature	Microelectronics Journal, 38, 216	2007
<u>A. Asgari</u> , M. Kalafi	The Control of Two-Dimensional-Electron-Gas density and Mobility in AlGa _N /Ga _N Heterostructures with Schottky gate	Materials Science and Engineering C 26, 898	2006
<u>A. Asgari</u> M. Kalafi, L. Faraone	Schottky gate effects on transport properties of AlGa _N /Ga _N Heterostructures	Phys. Stat. Sol (c) 3, 2333	2006
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<u>A. Asgari</u> M. Kalafi, L. Faraone	Theoretical model of transport characteristics of AlGa _x N/GaN High electron mobility transistor	Phys.Stat.. Sol. (c) 2, 1047	2005
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M. Kalafi, <u>A. Asgari</u>	The behavior of two-dimensional electron gas in GaN/Al _x Ga _{1-x} N/GaN heterostructures with very thin Al _x Ga _{1-x} N barriers	Physica E, 19, 321	2003
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Papers Presented at National and International Scientific Assemblies:

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Title of Paper	Title and Place of Assembly	Date
Graphene based Solar Cells	Recent Advances in Photovoltaics: Novel materials and device concepts for flexible and thin-film solar cells, September 28-30, Bukhara, Uzbekistan (Invited)	2016
Investigation of Spp in Graphene based cylindrical waveguide	ICOLE-1394, Shahin Sahr, Iran	2015
Synthesis and characterization of CdS/ZnS quantum dot for the white light spectrum	RIAPA-LDS 2015 25-26 May, Tabriz, Iran	2015
The effects of sell thickness on plasmon resonance frequency of Si/Ag core/sell nanoparticles	RIAPA-LDS 2015 25-26 May, Tabriz, Iran	2015

Optoelectronic Devices Based on III-Nitride Nanostructures	Second National Conference on Nanoscience and Nanotechnology, 20-21 May, Karaj (Invited)	2015
Graphene Based Solar Cell	National conference on Nanostructures and Graphene, 20-21 May, Tehran (Inviteid)	2015
Armchair Graphene Nanoribbons Infrared Detectors	ICMAT2015 28 June to 03 July 2015, Singapore (Inviteid)	2015
Modeling of the Graphene Based Schottky Barrier Solar Cells on InGaN Substrate	The 23rd Iranian Conference on Electrical Engineering (ICEE2015), Tehran on May 20-22	2015
The Effects of Structural Parameters of GaN Based Asymmetric Doubled Quantum Wells on Optical Gain in Laser Diodes	ICOP-1393, Tehran Iran, P. 454	2015
The Effect of Electron - Phonon Scattering on Propagation of SPP in Double Graphene Layers Structure	ICOP-1393, Tehran Iran, P. 305	2015
Modeling of the Graphene Based Schottky Barrier Solar Cells on InGaN Substrate	The 22nd Iranian Conference on Electrical Engineering (ICEE2014), Tehran on May 20-22	2014
The effects of capping and barrier layers on performance of nanostructures III-nitride based LEDs	Nanostructured Solar Cells, Tehran on Nov. 15	2014
Simulation Study of Graphene Based Silicon p-i-n Core-Shell-Shell Nanorods Solar Cell	The 5th International Congress on Nanoscience& Nanotechnology, Tehran, Iran, 22 – 24 October	2014
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The effects of temperature on coupling strength in a polariton microcavity	ICOP-1392, Shiraz Iran, P. 250	2014
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The electron transport in III-nitride based Nano-Optoelectronic Devices	ASEPE-2012, 4-6 Dec., Tabriz, Iran (Inviteid)	2013
Numerical analysis of the performance of AlGaAs/GaAs multi-quantum well Superluminescent diodes	6th International conference on Advanced optoelectronics and lasers, Sudak, crimea, ukraine	2013
Performance considerations of a photonic crystal based on graphene multilayer system	Proceeding of 21 th Iranian Conference on Electrical Engineering (IEEE)	2013
The study of relaxation time and diffusion length of minority carriers in GaN solar cells	Proceeding of 11 th Condensed Matter Conference, Shahrood Iran, P. 343	2013
Investigation of the Effect Of Temperature on Sensing Performance of Pd/ β - Ga ₂ O ₃ /GaN Hydrogen Sensor Schottky Diode	Proceeding of 11 th Condensed Matter Conference, Shahrood Iran, P. 39	2013
Temperature based Investigation of Graphene Refractive Index in Far-Infrared Region	Proceeding of Iranian Annual Physics Conference, Yazd Iran, P. 1417	2012
Comparison of Sensing Performance of Metal-Semiconductor-Metal (MSM) Hydrogen Sensors Pd/GaN and Pt/GaN	Proceeding of Iranian Annual Physics Conference, Yazd Iran, P. 1048	2012
Graphene based Optoelectronic Devices	ASEPE-2012, 4-6 Dec., Tabriz, Iran (Inviteid)	2012
Modeling of the performance of III-nitride based quantum dot laser	The 3rd international conference on the physics of optical materials and devices, Brgrade, Serbia	2012
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Investigation of performance of Pt/GaN metal-semiconductor-metal based hydrogen sensor	Proceeding of 18th Iranian Conference on Optics and Photonics, Tabriz, Iran, P. 539	2012
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Optimization of InGaN Multi Quantum Well Based Solar Cell	Proceeding of 17 th Iranian Conference on Optics and Photonics, Kerman, Iran, P. 297	2011
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An Approach for Thermal Modelling of Uncooled Infrared Bolometer Detector Arrays Including Noise Equivalent Temperature Difference (NETD) Prediction	Proceeding of 17 th Iranian Conference on Optics and Photonics, Kerman, Iran, P. 740	2011
The study of Optical losses in the Quantum Dot Laser (QDL) and their effects on the lasing Threshold current density	Proceeding of 17 th Iranian Conference on Optics and Photonics, Kerman, Iran, P. 37	2011
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Optimization of analytical model for bolometer detector performance prediction including radiative conductance and introduction of thermal feedback parameter	Proceeding of Iranian Annual Physics Conference, Hamadan, Iran, P. 608	2010
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Study of dark current in AlGa _N /Ga _N quantum dot infrared photodetectors	Proceeding of Iranian Annual Physics Conference, Mashhad, Iran, P.1365	2009

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Simulation and calculation for InAs/GaAs quantum dot infrared photodetector	Proceeding of 1 st National conference on optics and Laser Engineering, Isfahan, Iran, P. 804	2009
Electronic structure of InAs/GaAs self-assembled quantum dots with different shapes and sizes	Proceeding of 9 th condensed Matter Conference, Ahwaz, Iran, P. 461	2009
Study of the effects of geometric symmetries on electronic structure of quantum dot by density functional theory	Proceeding of 9 th condensed Matter Conference, Ahwaz, Iran, P. 457	2009
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The study of the gate miniaturizing and Schottky cap layer effects on performance of AlGaIn/GaN HEMT transistor	Proceeding of 9 th condensed Matter Conference, Ahwaz, Iran, P. 890	2009
Investigation of the effects of temperature and number of quantum dots on quantum capacitance of nitride structures	Proceeding of 9 th condensed Matter Conference, Ahwaz, Iran, P. 838	2009
Influence of Different Radius and Height on Exciton Binding Energy in GaN Cylindrical Quantum Dots	Proceeding of 9 th condensed Matter Conference, Ahwaz, Iran, P. 319	2009
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Energy levels of GaN Quantum Dots in Finite spin orbit coupling	Proceeding of 2nd International Conference on Nanoscience and Nanotechnology, Tabriz, Iran, P.137	2008

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Electrostatic traps of indirect excitons in coupled Ga _N quantum wells	Proceeding of 6th International Conference on Photonics, Devices and Systems, PHOTONICS PRAGUE '2008, P. 33	2008
Investigation of influence of doping density in electroabsorption modulator in Ga _N AlGa _N -Al _N quantum wells structures for working in optical communication wavelength.	Proceeding of Iranian Annual Physics Conference, University of Kashan, Iran, P. 226	2008
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Energy Relaxation Rate by Hot Electrons via Acoustic Phonons in AlGa _N /Ga _N Quantum Wells	Proceeding of Iranian Annual Physics Conference, University of Kashan, Iran, P.41	2008
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Theoretical calculation of Responsivity in Ga _N /InGa _N quantum well detector in UVA and visible rane	Proceeding of second Physics Conference, University of Payam Noor, Iran, P.197	2007
The study of IR-quantum well detectors detectivity as function of structural parameters	Proceeding of 13 th condensed Matter Conference, , IASBS, Iran, P. 91	2007
The study of piezoelectric polarization effects on AlGa _N /Ga _N quantum well UV detectors	Proceeding of 13 th condensed Matter Conference, , IASBS, Iran, P. 5	2007
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Study of the oscillator strength of Al _{0.3} Ga _{0.7} As/GaAs quantum well under the effect of the electric field	Proceeding of 8 th Iranian condensed Matter Conference, Ferdowsi University, Mashhad-Iran, P. 270	2007
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Electron transport in AlGa _N /Ga _N heterostructures transistor with Quantum dots	First International Congress on Nanoscience and Nanotechnology, Tehran, Iran	2006
The Control of absorption coefficient by cap layer thickness in Al _x Ga _{1-x} N/Ga _N heterostructure Quantum wells	6th International Conference on Physics of Light-Matter Coupling in Nanostructures Magdeburg, Germany	2006
Thermal Resistance Calculation of AlGa _N -Ga _N Devices	Proceeding of Iranian Annual Physics Conference, University of Shahrood, Iran, P.461	2006
Theoretical analysis of subband states controlled by cap layer thickness in an Al _x Ga _{1-x} N/Ga _N heterostructure	Proceeding of Iranian Annual Physics Conference, University of Shahrood, Iran, P.542	2006
Investigation of effects of traps on gate current in AlGa _N /Ga _N high electron mobility transistors	Proceeding of Iranian Annual Physics Conference, University of Shahrood, Iran, P.126	2006

Physics of carrier-transport mechanisms for theoretical modeling of nanometer AlGa _N /Ga _N Heterostructure field effect transistors	College on Physics of Nano-Devices, ICTP Trieste, Italy, P. 8	2006
Modeling of trap-assisted tunneling in AlGa _N /Ga _N heterostructure field effect transistors with different Al mole fraction	2006 E-MRS Spring Meeting, Symposium S, Nice, France, SA37	2006
Study of the electron energy distribution function in AlGa _N /Ga _N heterostructure field effect transistors	2006 E-MRS Spring Meeting, Symposium A, Nice, France, A1A37	2006
Analytical Model for Negative Differential Conductivity of AlGa _N /Ga _N High Electron Mobility Transistor	Thirteenth International Workshop on the Physics of Semiconductor Devices, New Delhi, India, December, P. 830	2005
Exact Numerical Analysis of an Extracted IR-Photodiodes	Thirteenth International Workshop on The Physics of Semiconductor Devices, New Delhi, India, P. 1090	2005
Schottky gate effects on transport properties of AlGa _N /Ga _N Heterostructures	The Sixth International Conference on Nitride Semiconductors, Bremen Germany, P. Tu-P-010	2005
Investigation of Hot-Phonon Effect on a Two-Dimensional Electron Gas of AlGa _N /Ga _N	Proceeding of Iranian Annual Physics Conference, University of Khorram Abad, Iran, P.126	2005
The Control of Two-Dimensional-Electron-Gas density and Mobility in AlGa _N /Ga _N Heterostructures with Schottky gate	2005 E-MRS Spring Meeting, Strasbourg, France, P. 21	2005
Nano-transistors and their application	Iran International Hi-Tech Fair, Tabriz, Iran, P. 17 (Inviteid)	2005
Modeling of the crystal growth furnace for GaSe by the Vertical Bridgman Method	ISCG-2005, Pueblo, Mexico, P. 60	2005
The control of Two-Dimensional-Electron-Gas density in AlGa _N /Ga _N Heterostructures with Schottky gate	Proceeding of 7th Iranian condensed Matter Conference, Tehran, Iran, P. 23,	2005
Theoretical model of transport characteristics of AlGa _N /Ga _N High electron mobility transistors	2004 E-MRS Fall Meeting, Warsaw University of Technology, Poland, P. 95	2004
The effects of Ga _N capping layer thickness on electrical properties of two-dimensional electron gas in Ga _N /AlGa _N /Ga _N heterostructures	A&NZIP 28th Condensed Matter and Materials Meeting, Charles Stuart University, Wagga	2004
Mobility of two dimensional electron gas in AlGa _N /Ga _N heterostructures with different Al mole fraction	Proceeding of Iranian Condensed Matter Physics Conference, Yazd University, Iran, P. 11	2003

Theoretical study of Two-dimensional electron gas in GaN/AlN/GaN heterostructures with very thin AlN barriers	PLCMN2, Greece, P. W5	2002
Calculation of band structure in Wurtzite semiconductors by K.P method	Proceeding of Iranian Condensed Matter Physics Conference, IASBS, Iran, P. 42	2000
Optical Study of electromagnetic surface modes in SiO & MgO micro-crystals	Proceeding of Iranian Annual Physics Conference, University of Mazandaran, Iran, P. 157, 28-31	1999
Study of Optical Bistability in GaSe Monocrystals	Proceeding of Iranian Annual Physics Conference, University of Kerman, Iran, P.126, 28-31.	1998

Research Projects:

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Title of Project	Place of Work	Dates	
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Investigation of the effects of metallic nanoparticles on performance of nanowire based photodetectors	University of Tabriz	2016	2017
Graphene organic-inorganic based Solar Cells	Center for International Studies and Scientific Cooperation	2016	2017
Investigation of fundamental losses in nitride based Quantum dot solar cells	Iran national Science Foundation	2016	2018
Modeling of mid-infrared wavelength switches using graphene nanoribbons	Photonic Excellency of the University of Tabriz	2015	2016
Investigation fundamental losses in nitride based solar cells.	University of Tabriz	2015	2016
Investigation of the exciton in nitride based quantum dot molecule	University of Tabriz	2014	2015
Optimization of the performance of Nitride based Super Luminescent Diodes	Photonic Excellency of the University of Tabriz	2013	2014

Study of the Vertical electron mobility in nitride optoelectronics Devices	University of Tabriz	2013	2014
Study of the broadening of electron mobility in nitride optoelectronics Devices	University of Tabriz	2012	2013
The effects of symmetry reduction on the photonic band gap of the anisotropic Circular photonic crystals	University of Tabriz	2010	2011
The study of electromagnetic (EM) wave out of page propagations in two-dimensional photonic crystals	University of Tabriz	2009	2010
Investigation of experimental parameters on self-assembled pattern in Azo-Polymers	University of Tabriz	2008	2010
Investigation of gate displacement on transport properties of Nitride HEMT	Azad University	2010	2010
The lifetime of indirect excitons in coupled AlGaIn/GaN quantum wells in an electrostatic trap	Research Institute for Fundamental Science	2010	2010
Study of Static characterization of nitride Quantum dot lasers	University of Tabriz	2008	2010
Study of Electron transport in AlGaIn/GaN heterostructures Nano-transistor with InN Quantum dots	University of Tabriz	2007	2008
Quantum well IR detectors	Research and training Institute	2006	2008
Band gap Engineering of in anisotropic Photonic Crystals	University of Tabriz	2006	2007
Band structure Engineering of Tunable Photonic Crystals	University of Tabriz	2006	2007
Modeling of AlGaIn/GaN Nano field effect transistors and study of those transport properties.	Iranian Nanotechnology Initiative	2005	2007
Study of the electron energy distribution function in AlGaIn/GaN heterostructure field effect transistors	University of Tabriz	2005	2006
The study of electromagnetic (EM) wave propagations in photonic crystals	University of Tabriz	2005	2006
The study of Gate current in AlGaIn/GaN heterostructure field effect transistors.	University of Tabriz	2004	2005

Research Interests:

- Theoretical study of optical & electrical properties of bulk and low-dimensional Semiconductors (Nitride Material, and Graphene).
- Modeling and characterization of Semiconductor devices.
- Modeling of Nano-electronic, Nano-photonics devices.

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Australian Nanotechnology Network (ANN)	Member	Australia	2003- Now
Iranian Nanotechnology Society	Member	Iran	2004-Now
American Physical Society (APS)	Member	USA	2007- Now
SPIE	Member	USA	2007-Now

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