Curriculum Vitae

Dr. TARIQ MUNIR

Assistant Professor
Centre of Excellence in Solid-State Physics
University of Punjab, QAC Lahore
Teaching experience: 7 yr
Research experience: 6 yr
Nationality: Pakistani
Marital status: Married
Email: tarriqmunirr@yahoo.com
Mobile : 03072010306
Date of birth : 15-06-1974

OBJECTIVE

Currently working full-time position as a Assistant Professor in Centre of Excellence Solid State Physics in teaching and research of M.Phil candidates, transferring my scientific theoretical (Simulation) and practical (Fabrication) knowledge to young generation and contribute to the research and development programme of the institution. I m working in an intellectually exciting and challenging environment in filed of Semiconductor Microelectronic and optoelectronic devices towards Nanotechnology.

EDUCATION

Academic Qualification

Doctor of Philosophy
Universiti Sains Malaysia (Malaysia)
PhD Solid-State Physics (Jan, 2011)
Thesis Title: DC and RF characterization of n-GaN Schottky diode for Microwave Application

Master of Science
Punjab University Lahore (Pakistan)
Master of Science in Physics (July, 2001)
Major: Advanced Electronics
CGPA/Class: 1st class

Bachelor of Science
Islamia University Bahawalpur (Pakistan)
Bachelor of Science (May, 1996)
Major: Math-Physics
CGPA/Class: 1st class

HONOURS

- Recipient of Malaysian Technical Cooperation Program Post graduate Scholarship, Ministry of Higher Education Malaysia; towards my PhD studies (2006).
- Recipient of Municipal Corporation help education Scholarship program Gujranwala Pakistan; towards my Masters studies (1997).
- Recipient of Fuji foundation Scholarship from Military and Armed Forces of Pakistan; towards my Masters studies (1997).
- Recipient of Fuji foundation Scholarship from Military and Armed Forces of Pakistan; towards my undergraduate studies, Bachelor studies (1991).

AWARDS

* Hadiah Sanjungan 2007 Kategori Penerbitan (2 Jurnal) USM
* Marquis Who's Who in the World (Book, 2009 Edition) USA

PROFESSIONAL EXPERIENCE

Lecturer **(March 2001 – January 2002)**

Pakistan International public school/college (PIPS) Gujranwala, Pakistan
Special subjects teach: Physics.

Lecturer **(January 2002 – May 2004)**

Swedish institute of Technical Education college Gujranwala, Pakistan
Special subjects teach: Physics.

Research Assistant **(August 2004 – December 2004)**

Worked on Interaction of short pulse laser with large band gap semiconductor with Assoc. Prof A.K Sharma under the *Intensified Research in Priority Areas (IRPA)* Grants University Science Malaysia.

Graduate Assistance **(January 2005 – December 2006)**

School of Physics, Universiti Sains Malaysia
Tutorial session: undergraduate program (year 1)
Lab demonstrator: Advance Photonic lab undergraduate program (year 2)

Research Assistant **(January 2006 – December 2010)**

Worked with Assoc. Pof. Mohd Fadzil Ain in NOR lab & high frequency lab USM on Simulation, fabrication and characterization of Silicon MOSFET, PN junction diode, UV photodetector and gas sensor under the *Intensified Research in Priority Areas (IRPA)* Grant Universiti Sains Malaysia.

Research Assistant **(January 2006 – December 2007)**

Worked with Senior Lecturer and researcher Dr. Magdy in NOR LAB USM on fabrication and characterization of MOSFETS and PN junction diode under the *Intensified Research in Priority Areas (IRPA)* Grant Universiti Sains Malaysia.

KEY PROJECTS & ACHIEVEMENTS

PhD's Project DC and RF characteristics of n-GaN Schottky diode for Microwave application

Project Summary

- Simulate the GaN Schottky diode DC and RF characteristics for Microwave application by using Silvaco and ISE TCAD.
- Fabricate and characterize GaN Schottky diode for DC and RF application.
- Comparison performance of GaN Schottky diode DC and RF characteristics for Microwave application by Simulation and Fabrication approach

Research Assistant Project

Project Summary

- Fabrication and characterization of Silicon MOSFET
- Fabrication and characterization of Silicon PN junction diode
- Fabrication and characterization of GaN Gas Sensor
- Fabrication and characterization of GaN UV photodetector

CERTIFICATIONS COURSES

- Molecular Beam Epitaxy (MBE) Nor Lab USM
- Semiconductor Fabrication Process course Nor Lab USM
- Fundamental concepts and application of Liquid Crystals USM
- Electromagnetic Compatibility Human Immunity and Ecology Kuala Lumpur
- Public Health and Safety Organization USM

LINGUISTIC COURSES

- Bahasa Malaysia **LKM (100)** from USM
- English Speaking Writing Reading Course **LSP** (402) from USM
- Public Speaking and Speech Writing Course **LHP** (457) from USM

EXPERTISE

Simulation:

* Silvaco * ISE TCAD

Experimental:

Fabrication

* Photoplotter * Photolithography * Mask aligner
* Dc and RF sputtering * Thermal evaporator * Thermal annealing furnace
* Plasma RIE system * lift-off process

Characterization

* I-V measurements * C-V measurement * RF measurement
* Hall effects measurement * Network Analyzer measurement
* XRD measurement * Scanning Electron Microscopy (SEM)

RESEARCH INTERESTS

- RF Semiconductor devices
- MOSFET
- Solar Cell
- LEDs
- Photodetectors

REFERENCES

Assoc. Prof. Azlan Abdul Aziz

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LIST OF PUBLICATIONS

Journal

- T. Munir, A. Abdul Aziz, M. J. Abdullah, N. M. Ahmed. "Concentration Variation effects on n-GaN Schottky diode current-voltage (I-V) Characteristics". *Material Science Forum*. Vol, 517. pp. 159-164, 2006. ISBN:0-87849-404-9

- T. Munir, A. Abdul Aziz, M. J. Abdullah, N. M. Ahmed . "Temperature Variation effects on current–voltage (I-V) Characteristics of n-GaN Schottky diode". *Material Science Forum*. Vol, 517. pp. 141-146,2006. ISBN:0-87849-404-9

- T. Munir, A. Abdul Aziz, M. J. Abdullah, N. M. Ahmed, A. Y. Hudeish. "Optimum n-GaN Schottky diode current-voltage (I-V) characteristics by using different metal contact". *J. Solid State Science and Technology*. Vol, 14, No.1. (Supp.), 6 pages. 2006.

- T. Munir, A. Abdul Aziz, M. J. Abdullah, N. M. Ahmed, A. Y. Hudeish. "Epi- layer thickness variation effects on n-GaN Schottky diode current –voltage (I-V) Characteristics". *J. Solid State Science and Technology. Letter*, Vol, 14, No.1. (Supp.), 6 pages. 2006.

- T. Munir, A. Abdul Aziz, M. J. Abdullah. "Electrical and thermal stability of Al/Ti ohmic contact on n-GaN Schottky diode"**.** *Jurnal Fizik Malaysia.* Vol 29, No.1-2. (Supp). pp.41, 2008.

- T. Munir, A. Abdul Aziz, M. J. Abdullah, M. F. Ain. "DC and RF characteristics of Schottky metal contacts on n-GaN Schottky diode". Article in review, 2011. Journal Applied Physics.

- T. Munir, A. Abdul Aziz, M. J. Abdullah, M. F. Ain. " DC and RF characteristics of Bilayer Schottky metal contacts on n-GaN Schottky diode". Article in review, 2011. Journal Applied Physics.

Conference

- T. Munir, A. Abdul Aziz, M. J. Abdullah. "The effects of Al and Pt/Ti simultaneously annealing on electrical characteristics of n-GaN Schottky diode". *Proc. IEEE. Semiconductor devices and Integrated circuits*, pp. 887-891, (Supp). Dec. 2006.

- T. Munir, A. Abdul Aziz, M. J. Abdullah." Epilayer Thickness and doping density variation effects on current-voltage (I-V) of n-GaN Schottky diode". *Proc. IEEE. Semiconductor devices and Integrated circuits*, pp. 892-895, (Supp).Dec. 2006.

- T. Munir, A. Abdul Aziz, M. J. Abdullah, M. F. Ain."Temperature dependent DC performance of n-GaN Schottky diode: Anumerical approach". *RSM 2007 Proc. 2007, Penang, Malaysia* pp.506-510. Paradise Sandy Beach Resort, Penang, 3-6 December 2007.

- T. Munir, A. Abdul Aziz, M. J. Abdullah, M. F. Ain. “Influence of Schottky metal contact on DC and RF behavior of GaN Schottky diode”. *Proc. IEEE RF and Microwave,* pp. 202-205, (supp).Dec. 2008.

- T. Munir, A. Abdul Aziz, M. J. Abdullah, M. F. Ain. “Improvement on Breakdown voltage and Leakage current of n-GaN Schottky diode using Metal overlap Edge Termination”. *Proc. American Institute of Physics* (AIP).Vol, 1217, p.489. (supp). May. 2007.

- T. Munir, A. Abdul Aziz, M. J. Abdullah, M. F. Ain. ”DC and RF behavior of n-GaN Schottky diode; A numerical approach”. *International Conference on Advancement of Materials and Nanotechnology*. 29th May 2007.The City Bayview Hotel, Langkawi Island, Malaysia

- T. Munir, A. Abdul Aziz, M. J. Abdullah. ”Comparison performance of Pt, Pd and Ni based Schottky contacts on n-GaN Schottky diode”**.** National Physics Conference. PERFIK 2006, Palace of the Golden Horses, Mines Resort City, Kuala Lumpur, 6-7 December 2006.