

Sadia Muniza Faraz

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Present Positions: Assistant Professor,
Department of Electronic Engineering, NED University of
Engg.& Tech. Karachi-75270, Pakistan

Academic Qualification:

2008 – Date	PhD Scholar.	Wide Band gap semiconductor devices NED University of Engg. & Tech., Karachi
2006	M. Engg.	Electronic Engineering (Micro System Design) NED University of Engg. & Tech., Karachi
1996	B.E.	Electrical Engineering, NED University of Engg. & Tech., Karachi
1990	H. Sc.	Pre-Engineering, St. Joseph’s College, Karachi.
1988	S. Sc.	Science, Muslim Govt. Girls School, Karachi.

PhD Research Project:

Title: Physical simulation, fabrication and characterization of wide band gap
semiconductor electronic and photonic devices

Description of Research Work:

- 1) Growth of ZnO nanorods on various substrates(Polymer, p-Si, Glass, p-SiC etc.).
- 2) Device fabrication of ZnO, GaN and SiC LEDs, Schottky Diodes, Heterojunction Diodes.
- 3) Structural, optical and electrical characterization of fabricated devices.
- 4) Physical modeling and simulation of devices.
- 5) Analysis of simulated and measured results.

Work Experience:

Oct. 2003 – Date	Assistant Professor, Dept. of Electronic Engg. NED University of Engg. & Tech.
Nov.1998- Oct.2003	Lecturer, Dept. of Electronic Engg. NED University.
Nov.1997 – Nov.1998	Lecturer, Dept. of Electrical Engg. NED University.
Aug.1996 – Oct.1997	Lecturer, Dept. of Electronic Engg. Sir Syed University of Engg. & Tech. Karachi, Pakistan
July.1996 – Aug.1996	Assistant Software Engineer, CompuNet Online, Karachi,
Jan.1996 – Jun.1996	Lecturer, Usman Institute of Technology, Karachi,

Teaching Experience:

1. *Masters Level Course:* Digital VLSI Design
2. *Undergraduate level courses:* offered in various disciplines of engineering
 - i) Solid State Devices
 - ii) Electronics-II
 - iii) Analog and Digital Electronics
 - iv) Programming with C-Language
 - v) Electronic Devices and Circuits

Technical Interests:

- i) Photonic and Electronic properties Of II-VI And III-V Semiconductors plus SiC
- ii) Defects in Semiconductors, Deep Traps and Interface States
- iii) Photovoltaics (Solar cells)
- iv) Electrical Characterization of semiconductor devices
- v) Semiconductor Device Modeling and Simulations

Professional and Scientific Membership

- i. Member PEC
- ii. Member IEEE (Electron Device Society)

Publications:

List of Publications

- [1] S. Faraz, Hadia Noor, M. Asghar, M. Willander, Q. Wahab, Modeling and simulations of Pd/n-ZnO Schottky diode and its comparison with measurements, *Advanced Materials Research* vols. 79-82, pp. 1317, (2009).
- [2] S. M. Faraz, H. Ashraf, M. Imran Arshad, P. R. Hageman, M. Asghar and Q. Wahab, Interface state density of free-standing GaN Schottky diodes, *Semicond. Sci. Technol.* 25, 095008 (2010)
- [3] Hadia Noor, P. Klason, S. M. Faraz, O. Nur, Q. Wahab, M. Willander, and M. Asghar, Influence of background concentration induced field on the emission rate signatures of an electron trap in zinc oxide Schottky devices, *J. Appl. Phys.*, 107, 103717 (2010)
- [4] H. Ashraf, M. Imran Arshad, S. M. Faraz, Q. Wahab, P. R. Hageman and M. Asghar, Study of electric field enhanced emission rates of an electron trap in *n*-type GaN grown by hydride vapor phase epitaxy, *J. Appl. Phys.*, 108, 103708 (2010)
- [5] M. Asghar, F. Iqbal, S.M. Faraz, V. Jokubavicius, Q. Wahab, M. Syvajarvi , Study of deep level defects in doped and semi-insulating n-6H-SiC epilayers grown by sublimation method, *Physica B* (2011), doi:10.1016/j.physb.2011.08.036
- [6] S. M. Faraz, N. H. Alvi, A. Henry, O. Nur, M. Willander and Q. Wahab, "Annealing effects on electrical and optical properties of n-ZnO/p-Si heterojunction diodes", *Advanced Materials Research* vol. 324, pp 233-236 (2011)

- [7] S. M. Faraz, N. H. Alvi, A. Henry, O. Nur, M. Willander, Q. Wahab, "Post fabrication annealing effects on electrical and optical characteristics of n-ZnO nanorods/p-Si heterojunction diodes", TechConnect World 2011, Nanotech Conference, June 13-16, 2011, Boston, Massachusetts, USA, ISBN 978-1-4398-7139-3
- [8] S. M. Faraz, V. Khranovskyy, R. Yakimova, A. Ulyashin And Q. Wahab, Temperature dependent current transport in Schottky diodes of nano structured ZnO grown on Si by magnetron sputtering, accepted, 2011 IEEE Regional Symposium Of Micro & Nano Electronics, Kota Kinabalu, Malaysia.
- [9] F. Iqbal, S. M. Faraz, A. Ali, Q. Wahab, Mikael Syrviä and M. Asghar, "Deep level transient spectroscopy of bulk- and n-doped 6H-SiC epilayers", 26th International conference on defects in semiconductors, 17-22 July, 2011, Nelson, New Zealand,.
- [10] S. M. Faraz, O. Nur, M. Willander and Q. Wahab, Interface states density of Au/n-ZnO nanorods Schottky diodes, EMRS fall meeting, 19-23 September, 2011, Warsaw, Poland.
- [11] M. Asghar, S. Faraz, V. Jokubavicius, Q. Wahab and M. Syväjärvi, "Study of deep level defects in n- and p-type 6H-SiC grown by sublimation epitaxy for fluorescent properties", submitted to 2011- International Conference on Silicon Carbide and Related Materials (ICSCRM 2011), Cleveland, Ohio, USA
- [12] S. M. Faraz, V. Khranovskyy, R. Yakimova, A. Ulyashin and Q. Wahab, "Electrical Characterization of Interface States in Ni/ZnO Schottky Diodes", accepted in MRS-2011 fall meeting to be held from November 28- December 2, 2011, Boston, Massachusetts, USA