

# Curriculum Vitae

**Name** ABDUL MAJID  
**Father's Name** ABDUL MAJEED  
**Date & Place of Birth** April 25, 1961. Wah Cantt, Distt.: Rawalpindi (Punjab), Pakistan.  
**Nationality / N. I. Card No.** Pakistani, 37406-3111328-5 (Old: 213-61-037944).  
**Passport No.** AR0573281 (valid upto 10 August, 2012)  
**Languages** Urdu, English (reads, writes, speaks)  
**Job Address** Department of Physics,  
University of Azad Jammu and Kashmir  
Muzaffarabad - 13100, Pakistan.  
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## ACADEMIC QUALIFICATIONS

- ✦ **Ph. D., Physics (Semiconductors Physics), 2006.**  
Department of Physics, Quaid-i-Azam University, Islamabad, Pakistan  
Title: **Study of Deep Levels Associated with some Heavy Transition-Metals in MOCVD GaAs.**  
Supervisor: **Dr. M. Zafar Iqbal** (Meritorious Professor).
- ✦ **M. Sc.\*, Physics, 1986,**  
University of Peshawar, Peshawar, Pakistan.  
Major Subjects: *Mathematical Method of Phys., Quantum Mech. Solid State Phys., Electronics., Nuclear Phys., Thermal Phys., Electromagnetic Theory, Classical Mech., (Lab. Courses: Solid State Phys., Electronics, Nuclear Phys., Optics, Spectroscopy, Modern Phys.) etc.*
- ✦ **B. Sc., (Physics and Math-A & -B), 1983,**  
University of Punjab, Lahore. Pakistan.  
Major Subjects: *Physics, Pure Mathematics (Course-A), Applied Mathematics (Course-B), English.*
- ✦ **Higher Secondary School Certificate, 1979,**  
(F.G. College for boys, Wah Cantt. Pakistan) F.B.I.S.E., Islamabad.  
Major Subjects: *Physics, Chemistry, Mathematics, Urdu, English.*
- ✦ **Secondary School Certificate, 1977,**  
(F. G. Model High School No. 6, Wah Cantt, Pakistan), B.I.S.E., Sargodha.  
Major Subjects: *Physics, Chemistry, Math., Technical Drawing, Urdu, English, Pakistan Studies, Islamiyat (Islamic Studies)*

## HONOURS AND AWARDS

- ✦ \*First Position in M.Sc. in the department of Physics Government Postgraduate College, Abbottabad.
- ✦ Merit Scholarship in M.Sc.(Physics) for two years (1984-86)
- ✦ Commission of European Communities Project No. C11-CT93-0076 "A partially supported for Collaborative study on Transition Metal Doped III-Vs Compound Semiconductors".
- ✦ Study and reported first ever the deep levels introduced by Rh, Ru and Os in GaAs

## EXTRA QUALIFICATIONS

### Computer Courses:

- ✧ FORTRAN-77, from Oct. 1989 to Jan. 1990, Computer Centre, Azad Jammu and Kashmir University (AJ&KU), Muzaffarabad, Pakistan.
- ✧ Computer Orientation, from Jan. 1987 to Aug. 1987, P.O.F. Welfare Computer Centre, Wah Cantt, Pakistan.

### Technical Courses:

- ✧ Electrician Course, from Oct. 1983 to May 1984, Allama Iqbal Open University, Islamabad, Pakistan.
- ✧ Electrical Wiring, from Oct. 1982 to May 1983, Allama Iqbal Open University, Islamabad, Pakistan.
- ✧ Photography, from Jun. 1977 to Jan. 1978, London Institute of Photography (Pvt), Karachi, Pakistan.

## TEACHING AND RESEARCH EXPERIENCE

**Designation:** Full-time Faculty Member of Physics Department, University of Azad Jammu and Kashmir, Muzaffarabad (A.K.)-13100, Pakistan.

**Lecturer (BPS-17)**, (From September 21st, 1987 to February 11, 1994),  
**Assistant Professor (BPS-18)**, (From February 12, 1994 to August 11, 2004),  
**Associate Professor (BPS-19)**, (From August 11, 2004 to May 29, 2007)  
**Associate Professor (BPS-20)**, (From May 30, 2007 to Continue)

**Nature of Job:** **Teaching M.Phil. Physics Classes**

- Physics of Semiconductors*
- Physics of Semiconductors Devices*
- Electrodynamics*

**Teaching M.Sc. Physics Classes.**

- Solid State Physics (General Paper).*
- Advanced Solid State Physics (Special Paper -I and II).*
- Computational Physics.*

**Incharge / Supervisor:**

- Solid State Physics Laboratory, (Since 1987-continue).*
- Laser / Spectroscopy Laboratory (1987-1994).*
- Solid State Physics Research Lab. (Since 1990-Continue)*  
- *Supervisor Students Projects in Solid State Physics.*
- Computational Physics Laboratory (1993-94).*

**Chairman**, University (AJ&K) Web Site Developer (from August 8, 2004)

**Chairman**, University (AJ&K) Technical Committee (from August 1, 2005)

**Member**, University (AJ&K) Affiliation Committee (from 2005)

**Additional Controller of Examinations**, University of AJ&K (from October 31, 2006)

## EDITORSHIP

**Semiconductor News**, A quarterly publication of Pakistan Society for Semiconductor Science and Technology (PS<sup>3</sup>T) since 1982.

- 1999 – 2000: **Assistant Editor**, for Vol. 8, 4.
- 2000 – continue: **Associate Editor**, for Vol. 09, Issue No. 1, 2, 3, 4, Vol. 10, Issue No. 1, 2, 3, 4, Vol. 11, Issue No. 1, 2, 3, Vol. 12, Issue No. 1, 2, 3, 4, Vol. 13, Issue No. 1, 2, 3, 4, Vol. 14, Issue No. 1, 2, 3, 4 and Vol. 15, Issue No. 1.

**Web page Developer**

- 2000 – continue: [www.geocities.com/semnews](http://www.geocities.com/semnews) (Associate Editor of *Semiconductor News at Web*).
- 2000 – continue: [www.geocities.com/pssstweb](http://www.geocities.com/pssstweb): Web site of *Pakistan Society for Semiconductor Science and Technology* (PS<sup>3</sup>T) developed and maintained.
- 2001 – continue: [www.geocities.com/scphys](http://www.geocities.com/scphys): A web site of *Semiconductor Physics Laboratory* (SPL) at Quaid-I-Azam University, Islamabad, Pakistan, developed and maintained.

## RESEARCH INTEREST

- ✧ Characterisation and Development of Semiconductor Materials and Devices.
- ✧ Fabrication and Characterisation of Metal and Carbon nanotubes.
- ✧ Fabrication and Characterisation of Porous Silicon.
- ✧ Computer Controlled Instrumentation and Data Acquisition.

## RESEARCH ACTIVITIES

### **Project:**

- University/ U.G.C. Project - **Characterisation of some Technologically important Materials in Thin Films form** (done and facilitated the two M.Sc. research projects).
- Commission of European Communities project No. CI1-CT93-0076. A partially supported for Collaborative **Study on Transition Metal Doped III-Vs Compound Semiconductors** (Done as research project of Ph.D.)
- AJ&K University research support project - **Fabrication and Characterisation of Porous Silicon. (approved)**
- HEC Infrastructure Facilities project: Provision of Liquid Nitrogen Plant: A Basic Infrastructure for Experimental Sciences **“Cryogenics, Key to Advanced Science and Technology”** (submitted via UAJK)

### **Project Supervised (M.Sc. Student's Research Reports)**

1. Muhammad Yousaf, (2007), **Energy Band Structure of Carbon Nanotubes using Atomistix Virtual Nano Lab.**
2. Saeed-ul Hassan Gilani, (2007), **Fabrication of porous on n-Type Silicon.**
3. Ishtiaq Ahmed and Naeem Akhtar, (2007), **Study of Organic Light Emitting Diode.**
4. Darakhshan Jabeen, (2007), **Study of Fabrication of porous on p-Type Silicon.**
5. Habib-ur-Rehman, (2006), **Study the Formation Porous Silicon.**
6. Khalid Mehmood, (2006), **Fabrication & Characterization of Carbon Nanotubes.**
7. Zulqar-Nain Habib, (2006), **Fabrication and Characterization of Metal Nanotubes.**
8. Mohsin Rafique, (2006), **Study and numerical calculation of electronic structure of Si.**
9. Tariq Aziz, (2006), **Study of electronic structure of GaAs with the help of Density Function Theory.**
10. Akhtar Hussain and M. Abdul Rauf Khan, (1996), **Optical Properties of Chlorine Doped  $Zn_{0.9}Cd_{0.1}S$  Thin Films.**
11. Akram-ul-Haq, (1992), **Optical Properties of  $Zn_xCd_{1-x}S$  Thin Films Evaporated by Electron Bombardment.**
12. Nigahat G. M. and Fauzia Tayyab, (1990), **Temperature Dependent Electrical Conductivity of Doped Germanium.**
13. Ajaz Hassan Raza, (1990), **Temperature Dependent Hall Effect of Doped Germanium.**
14. Abdul Hamid Khan, (1989), **Measurement of Lattice Parameters of Potassium Bromide by X-Ray Diffraction.**
15. Muhammad Rafique, (1989), **Study of Lattice Parameters of Sodium Chloride.**
16. Najam-ul Hassan, (1989), **Determination of Lattice Parameters of Potassium Iodide by X-Ray Diffraction.**

## RESEARCH PUBLICATIONS

1. Khizar-ul-Haq, M. A. Khan, U.S.Qurashi and **Abdul Majid**, *Interaction of alpha radiation with iron doped n-type silicon*, (Microelectronics J. Published online 15 Jan. 2008)
2. Nazir A. Naz, Umar S. Qurashi, **Abdul Majid**, M. Zafar Iqbal, *Doubly-charged state of EL2 defect in MOCVD grown Gas*, Physica B, **401**, 250 (2007).
3. Suleman Khan, Naseer Ahmed, Akhlaq Ahmad Khan Amanullah Khan and **A. Majid**, *Lie Group Analysis of a Linear Nonholonomic Dynamical System* Sci. Int. **19**, 83, (2007)
4. **Abdul Majid**, *Efficient Low Level Signal Measuring Instrument Lock-In Amplifier*, Sci. Echo, 15 July, 2007.
5. M. Zafar Iqbal and **A. Majid**, *Electric-field-enhanced thermal emission from osmium-related deep level in n-GaAs*, Advances in Science and Technology Vol. **46** pp. 73, Trans Tech Publications, Switzerland (2006).
6. **A. Majid**, M. Zafar Iqbal, A. Dadgar and D. Bimberg, *Osmium Related Deep Levels in MOCVD Grown GaAs*, J. Appl. Phys., **98**, 083709 (2005).
7. **A. Majid**, M. Zafar Iqbal, A. Dadgar and D. Bimberg, *Deep Levels in Ruthenium Doped p-type MOCVD GaAs*, 27th International Conference on the Physics of Semiconductors, Arizona, AIP Conf. Proc. **772**, 143 (2005).
8. M. Zafar Iqbal, **A. Majid**, A. Dadgar and D. Bimberg, *Deep Levels in Osmium Doped p-type GaAs Grown by Metal-organic Chemical Vapor Deposition*, 27th International Conference on the Physics of Semiconductors, Arizona, USA. AIP Conf. Proc. **772**, 147 (2005).
9. M. Zafar Iqbal, **A. Majid**, A. Dadgar and D. Bimberg, *Osmium Related Deep Levels in n-type GaAs*, Physica B, **340**, 358 (2003).
10. **A. Majid**, M. Zafar Iqbal, A. Dadgar and D. Bimberg, *Deep Levels in Rhodium-Doped p-type MOCVD GaAs*, Physica B, **340**, 362 (2003).
11. **A. Majid**, M. Zafar Iqbal, Shah Haidar Khan, Akbar Ali, Nasim Zafar, A. Dadgar and D. Bimberg., *Characteristics of Deep Levels Associated with Rhodium Impurity*, J. Appl. Phys., **94**, 3115 (2003).
12. M. Zafar Iqbal, **A. Majid**, Shah Haidar Khan, Akbar Ali, Nasim Zafar, A. Dadgar and D. Bimberg., *Rhodium Related Deep Levels in n-type MOCVD GaAs.*, Physica B, **308**, p816-819 (2001).
13. M. Zafar Iqbal, U. S. Qurashi, **A. Majid**, Aurangzab Khan, Nasim Zafar, A. Dadgar and D. Bimberg., *Deep Levels Associated with Alpha Irradiation of n-type MOCVD InP*, Physica B, **273**, 839 (1999).
14. **A. Majid**, A. Hussain and M. A. R. Khan, *Determination of Optical Constant and Thickness of Zn<sub>0.9</sub>Cd<sub>0.1</sub>S Thin Films*, Kashmir Res. J. N. Sci., **Vol 1 (1)**, 27 (1997).
15. **A. Majid** and G. A Khan, *A Proposed Automated Computerized Hall Profiling System for Characterization of Semiconductor Materials*, Kashmir Res. J. N. Sci., **Vol 1 (2)**, 87 (1997).
16. M. Zafar Iqbal and **A. Majid**, *Characteristics of Deep Levels Associated with Rhodium Impurity in MOCVD*. (submitted to Phys. Rev. B).
17. **Abdul Majid**, *Effect of lambda correct electric field on emission rates of osmium related deep level in n-type Gas* (submitted to J. Appl. Phys.).

## CONFERENCE PRESENTATIONS (unpublished)

1. **A. Majid**, M. Zafar Iqbal, Akbar and Ali, *A Hole Emitting Metastable Defect in n-type GaAs*, presented at 27<sup>th</sup> International Nathiagali Summer College; Nathiagali, NWFP, Pakistan. June 26-June 31, 2002.
2. **A. Majid**, M. Zafar Iqbal, Akbar and Ali *Extended Defect of Rhodium in MOCVD Grown n-GaAs*, presented at 27<sup>th</sup> International Nathiagali Summer College; Nathiagali, NWFP, Pakistan. June 26-June 31, 2002.
3. **A. Majid**, M. Zafar Iqbal and Akbar Ali, *Investigation of Rhodium Related Deep Levels in MOCVD Grown n-GaAs*, presented at 26<sup>th</sup> International Nathiagali Summer College; Nathiagali, NWFP, Pakistan. July 2-July 8, 2001.

4. **A. Majid**, S. H. Khan, M. Zafar Iqbal and Akbar Ali, **Deep Level Transient Spectroscopy of Rhodium Doped n-GaAs**, presented at 8<sup>th</sup> National Symposium on “Frontiers in Physics”, Govt. College University, Lahore, November 20-22, 2000.
5. S. H. Khan, **A. Majid**, M. Zafar Iqbal and Akbar Ali, **Field Effect on Thermal Electron Emission from Rhodium in n-GaAs**, presented at 8<sup>th</sup> National Symposium on “Frontiers in Physics”, Govt. College University, Lahore, November 20-22, 2000,.

#### CONFERENCES/SEMINARS ORGANIZED

1. *Tutorial Course and Symposium on Topics in Semiconductors*, Quaid-i-Azam University, Islamabad, Pakistan, April 8-10,1999.
2. *Tutorial Course and Symposium on Topics in Semiconductors*, Quaid-i-Azam University, Islamabad, Pakistan, April 12-14, 2004.
3. *Workshop on Nanotechnologies*, Quaid-i-Azam University, Islamabad, Pakistan, April 15-17, 2004.

#### TRAINING / WORKSHOP ATTENDED

1. *Workshop on Nanoscience and Catalysis*, National Centre for Physics-Quaid-i-Azam University (NCP-QAU) Islamabad, Pakistan, March 24-25,2008.
2. *Workshop on P.C. Hardware Maintenance*, University Grants Commission, Islamabad, Pakistan, April 22-27, 1995.
3. *Workshop on Computer Algebra*, Academy of Higher Education, University Grants Commission, Regional Centre Lahore, Pakistan, December 16-22, 1992.
4. *Workshop On Computational Methods*; Academy of Higher Education; University Grants Commission, Islamabad, Pakistan, January 1st-9th,1992.
5. *Regional Workshop on Physics and its Industrial Application; Standardization and Quality Assurance*, The National Physical Standard Laboratory, Islamabad, Pakistan. February 21-23, 1989.

#### INTERNATIONAL/REGIONAL CONFERENCES ATTENDED

1. **International Symposium on Contemporary Physics**, Quaid-i-Azam University, Islamabad, Pakistan. March 26-30, 2007
2. COMSATS Series of Seminars on Science & Technology: **Fluctuation –TEM analysis of nanoscale order in amorphous materials**, HEC Islamabad, Pakistan, Jan 08, 2007.
3. 30<sup>th</sup> International Nathiagali Summer College on **Physics and Contemporary Needs – Nano Science and its Applications**; Nathiagali, NWFP, Pakistan. July 4 - 9, 2005.
4. *Tutorial Course and Symposium on Topics in Semiconductors* and *Workshop on Nanotechnology*, National Centre for Physics/Pakistan Society for Semiconductor Science & Technology Seminar; Department of Physics, Quaid-i-Azam University, Islamabad, Pakistan. April 12 - 17, 2004.
5. 28<sup>th</sup> International Nathiagali Summer College on **Physics and Contemporary Needs – Condensed Matter Physics**; Nathiagali, NWFP, Pakistan. July 7 - 13, 2003.
6. **9<sup>th</sup> National Symposium on Frontiers in Physics**, Govt. College University, Lahore, Pakistan. January 28 - 30, 2003.
7. Seminar on “**Guidelines for Young Researchers to Publish Scientific Research in International Journals/ Conferences**” The abdu salam International centre for theoretical physics – Pakistan Chapter (ASICTP-PC), at Quaid-i-Azam University, Islamabad, Pakistan. December 18, 2002.
8. **National Symposium on Nanotechnologies**, COMSATS Institute of Information Technologies, Islamabad, Pakistan. November 4 - 5, 2002.
9. 27<sup>th</sup> International Nathiagali Summer College on **Physics and Contemporary Needs – Condensed Matter Physics**; Nathiagali, NWFP, Pakistan. June 26 - 31, 2002.
10. 26<sup>th</sup> International Nathiagali Summer College on **Physics and Contemporary Needs – Condensed Matter Physics**; Nathiagali, NWFP, Pakistan. July 2 - 8, 2001.
11. **8<sup>th</sup> National Symposium on “Frontiers in Physics”**, November 20-22, 2000, Govt. College, Lahore.

12. **Real-Time Technologies (Technology 2000)** Live Internet Seminar; National Instrument, Austin, Texas USA; July 28, 1999.
13. **Tutorial Course and Symposium on Topics in Semiconductors**; National Centre for Physics/Pakistan Society for Semiconductor Science & Technology Seminar; Department of Physics, Quaid-i-Azam University, Islamabad, Pakistan. April 8 - 10 17, 1998.
14. 23<sup>th</sup> International Nathiagali Summer College on **Physics and Contemporary Needs – Frontiers in Semiconductors**; Nathiagali, NWFP, Pakistan. June 24-July 04, 1998.
15. **2nd Pakistan Society for Semiconductor Science & Technology Seminar**, Department of Physics, Quaid-i-Azam University, Islamabad, Pakistan. March 17, 1997.
16. **Pakistan Institute of Physics International Conference**, Govt. College Lahore, Pakistan, March 31st - April 3rd., 1997.
17. 16<sup>th</sup> International Nathiagali Summer College on **Physics and Contemporary Needs –Material Science**; Nathiagali, NWFP, Pakistan, July 6 - 11, 1991.
18. **Seminar on Metrology, Measurement and Standardization**; National Physical and Standard Laboratory, Islamabad, Pakistan, March 14, 1990.
19. **Third Albert Einstein Seminar**; Department of Mathematics, Quaid-i-Azam University, Islamabad, Pakistan, 5 - 27 February, 1989.

### COMPUTER EXPERIENCE / SKILLS

**Languages** (FORTRAN-77, QBASIC, Visual BASIC and LabView)

**Application Programmes** (Microsoft Windows, LINUX, Quantum Espresso, Origin, Sigma Plot, Microsoft Excel, Lotus 123, Microsoft Word, Microsoft Power Point, ChiWriter, Orcad, Corel Draw, *MathCAD* and *Mathematica*)

**Computer Used**

- ✧ Micro-computers (IBM PC, PS-II and 80x86 and Pentium Compatible –Desktop and Laptop)
- ✧ Macintosh LC III
- ✧ Mini-computer IBM-320 (RISC System/6000)

### MEMBERSHIP OF SCIENTIFIC AND TECHNICAL SOCIETIES

- ✧ Life member Pakistan Institute of Physics (**PIP**), Lahore, Pakistan.
- ✧ Life member Pakistan Society for Semiconductor Science and Technology (**PS<sup>3</sup>T**) Quaid-i-Azam University, Islamabad; Pakistan.
- ✧ Member Pakistan Physical Society (**PPS**). Islamabad; Pakistan.
- ✧ Associate Member, Institute of Nonotechnology (**IoN**), USA.
- ✧ Member Test and Technology Technical Council (**tttc**), USA , a sister society of IEEE, USA.