

Curriculum Vitae*

1. **Name** : **Azher Majid Siddiqui**
2. **Present Position** : **Assistant Professor**
3. **Place of Work** : Department of Physics
Jamia Millia Islamia
New Delhi-110025
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<http://www.geocities.com/azherms>
4. **Previous Positions** : **Research Associate (RA)**, Inter-University
Accelerator Centre (*formerly Nuclear Science
Centre*) 03-10-2001 – 15-01-2004 (~ 2.5 years).
5. **Academic Record**

B.Sc. Honours (Phys.) - 1988 - Osmania University, Hyderabad
M.Sc.(Phys.) - 1991 - Aligarh Muslim University, Aligarh
M.Phil (Phys.) - 1993 - School of Physics, University of Hyderabad, Hyderabad.
Title of dissertation: **Pion-Muon Channeling in Crystals with Imperfections**
Ph.D - 2000 - School of Physics, University of Hyderabad, Hyderabad.
Under the supervision of Prof Anand P Pathak
Title of Thesis: **Effects of Defects and Strain on Ion Channeling in Solids**
6. **Research Guidance**
 - One Ph.D student is at the verge of submission under my co-supervision and three students are currently working under my supervision.
 - Supervised 10 M.Sc. Projects and 1 more is working during the session 2009-10
7. **Teaching Experience**
 - M.Sc. (Final), Theory : **Characterization of Materials**
 - B.Sc. (Final) Theory : **Structure of Matter**
 - B.Sc. (II Year) Theory : **Optics**
 - M.Sc. (Final) : **Laboratory**
 - B.Sc. (Final) : **Laboratory**
 - B.Sc. (II Year) : **Laboratory**
 - M. Tech (I Sem) : **Thin Film Growth and Epitaxy**
 - M. Tech (II Sem) : **Characterization of Materials**
 - Re-designed the syllabus of the course “Characterization of Materials” for the M.Sc.
8. **Publications**
 - **39 Papers** in various International & National Journals/Proceedings/Reports {please refer to the publications list}.

* Updated on Friday the 25th June, 2010

9. Research Projects Undertaken

Co-Investigator in a UFUP project 37302 entitled Effects of SHI Irradiation on Conjugated Polymers, sponsored by Inter University Accelerator Centre, New Delhi.

10. Visits Abroad

- Participated in the International Workshop Charged and Neutral Particles Channeling Phenomena *Channeling 2004*, Istituto Nazionale di Fisica Nucleare (INFN) – Laboratori Nazionale di Frascati, Frascati (Roma) Italy, 2-6 November 2004

11. Invited Lectures

- Selected as *category B* speaker under the **Theoretical Physics Seminar Circuit (TPSC) program** 1999-2000.
- *Invited Lecture* at the Young Physicists Colloquium, Saha Institute of Nuclear Physics, Kolkata, August 2001 (YPC 2001).
- *Invited Lecture* at the **National Seminar on Physics of Materials**, Department of Physics, University of Jammu, Jammu, November 23-24 2004.
- *Popular Lecture* on **Accelerator Physics, Semiconductor Devices, Solid State Physics and Thermodynamics** for participating teachers in a Refresher Course organized by the *Institute of Advance Studies in Education*, Faculty of Education, Jamia Millia Islamia, New Delhi.
- *Invited Lecture* at the **Recent Trends in Material sciences**, Post Graduate Department of Physics, DAV College Amritsar, 10-11 February 2009.
- *Invited Lecture* at the **National Seminar on Physics and Technology of Sensors. NSPTS – 14**, Jiwaji University, Gwalior, 1-3 March 2009.

12. Outreach Programme

- *Vetted/Reviewed* the Manuscripts Physics Textbooks for Class XI and XII (Urdu Version), organized by Department of Education in Science and Mathematics (DESM), National Council for Educational Research and Training (NCERT), New Delhi

13. Field of Research Interest

- Ion-Solid Interaction. The basic interest is in the Utilization of Accelerators for Materials Science Research. I have carried out a series of experiments to characterize Semiconductor Heterostructures using Rutherford Backscattering Spectrometry (RBS)/Channeling. The other characterization technique that has been used as complimentary to RBS/C is High Resolution X-Ray Diffraction.

14. Organizing Conferences/Workshops

- Involved in *organizing* several International/National Conferences (21st International Conference on Nuclear Tracks in Solids, 20th International Conference on Atomic Collisions in Solids, 14th National Laser Symposium, etc.). Actively participated in the **Editing of the Proceedings** of the above events.
- **Joint Secretary** for the forthcoming *XV International Workshop on Physics of Semiconductor Devices*, 15th – 19th December 2009, Department of Physics, Jamia Millia Islamia, New Delhi.

15. Responsibilities in the Department

- Computer Committee Member, Department of Physics, Jamia Millia Islamia.
- Time-Table In-Charge, Department of Physics, Jamia Millia Islamia.

16. Referee, Advances in Applied Research, Coimbatore, India.

List of Publications

A. Review Articles

- **Ion Beam Modifications and Characterisation of Semiconductor Heterostructures**, Azher M. Siddiqui, S. Dhamodaran, S.V. S. Nageseswara Rao, N. Sathish and Anand P. Pathak *Proc. International Conf. on Adv. in Surface Treatment: Research & Applications (ASTRA)*, Ed. T.S. Sudershan, G. Sunderarajan, G. Totten and S.V. Joshi, 633-641, 2004.

B. Refereed Publications

1. **Double Screening Problem in Dechanneling by Point Defects**, Azher M. Siddiqui, V. Harikumar and A.P. Pathak, *Phys. Stat. Sol. B*, 185, 77-85, 1994.
2. **Scattering of Pions and Channeled Muons by Impurities in Single Crystals**, Azher M Siddiqui, V. Harikumar, L.N.S. Prakash Goteti and A.P. Pathak, *Modern Physics Letters (B)* 10, 745-751, 1996.
3. **Dechanneling by Ionized Point Defects in Solids: Double Screening Effects**, Azher M. Siddiqui, A. Kiran and A.P. Pathak, *Modern Physics Letters (B)*, 11, 1231-1239, 1996.
4. **Lattice Strain Measurement of Strained In_{0.1}Ga_{0.9}As/GaAs heterostructures by RBS and Channeling**, Azher M. Siddiqui, A.P. Pathak, B. Sundarvel, Amal K. Das, K. Sekar, B.N. Dev and B.M. Arora, *Nucl. Inst. And Meth. (B)*, 142, 387-392, 1998.
5. **Quantum Models For Dechanneling By Point Defects And Extended Defects**, A.P. Pathak, L.N.S. Prakash Goteti and Azher M. Siddiqui, American Institute of Physics (AIP), 475, 765-768, 1999, Conf. Proc CAARI 15.
6. **Defects and Strain Studies in Semiconductor Multilayers**, A.P. Pathak, S.V.S.N. Rao and Azher M. Siddiqui, *Nucl. Inst. And Meth. (B)*, 161-163, 488-491, 2000.
7. **Ion channeling, High Resolution X-Ray Diffraction and Raman Spectroscopy in Strained Quantum Wells**, Azher M. Siddiqui, S.V.S.N. Rao, A.P. Pathak, V.N. Kulkarni, R. Keshav Murthy, Eric Williams, Daryush Ila, Claudiu Muntele and B.M. Arora, *Journal of Applied Physics*, 90, 2824-2830, 2001.
8. **Strain Measurements in Multi-layers by Ion Channeling, High Resolution XRD and Raman Spectroscopy**, Azher M. Siddiqui, S.V.S.N. Rao and A.P. Pathak, American Institute of Physics (AIP), 576, 476-479, 2001, Conf. Proc CAARI 16.
9. **Ion Beam Studies in Strained Layer Superlattices**, A.P. Pathak, Azher M. Siddiqui, G.B.V.S. Lakshmi, S.V.S.N. Rao, S.K. Srivastava, S. Ghosh, D. Bhattacharya, D.K. Avasthi, Dipak K. Goswami, P. Satyam, B. N. Dev and A. Tueros, *Nucl. Inst. And Meth. (B)*, 193, 319-323, 2002.
10. **Automation of Channeling Experiment for Lattice Strain Measurements Using High Energy Ion Beams**, S.V.S.N. Rao, D.K. Avasthi, E.T. Subramanyam, Kundan Singh, G.B.V.S. Lakshmi, S.A. Khan, Azher M. Siddiqui, A. Tripathi, S.K. Srivastava, Sarvesh Kumar, T. Srinivasan, Umesh Tiwari, S.K. Mehta, R. Muralidharan, R.K. Jain and A.P. Pathak, American Institute of Physics (AIP), 680, 94-97, 2003, Conf. Proc CAARI 17.
11. **Ion Beam Studies of Strains/Defects in Semiconductor Multilayers**, A.P. Pathak, S.V.S. N. Rao, D.K. Avasthi, Azher M. Siddiqui, S.K. Srivastava, F. Eichhorn, R. Groetzschel, N. Schell and A. Tueros, American Institute of Physics (AIP), 680, 593-596, 2003, Conf. Proc CAARI 17.
12. **Electronic Sputtering from Semiconducting HOPG: A Study of Angular Dependence**, A. Tripathi, S.A. Khan, S.K. Srivastava, M. Kumar, S. Kumar, S.V.S.N. Rao, G.B.V.S. Laxmi, N. Bajwa, H.S. Nagaraja, Azher M. Siddiqui, V.K. Mittal, A. Szokefalvi, M. Kurth, A.C. Pandey, D.K. Avasthi, and H.D. Carstanjen, *Nucl. Inst. And Meth. (B)*, 212, 402-406, 2003.

13. **Ion Beam Characterization and Engineering of Strain in Semiconductor Multi-layers**, S.V.S.N. Rao, A.P. Pathak, Azher M. Siddiqui, D.K. Avasthi, Claudiu Muntele, D. Ila, B.N. Dev, R. Muralidharan, F. Eichhorn, R. Groetzschel and A. Turos, *Nucl. Inst. and Meth. (B)*, 212, 442-450, 2003.
14. **Ion Beam Induced Modification of Lattice Strains in In_{0.1}Ga_{0.9}As/GaAs system**, S.V.S.N. Rao, A.K. Rajam, A.P. Pathak, Azher M. Siddiqui, D.K. Avasthi, T. Srinivasan, Umesh Tiwari, S.K. Mehta, R. Muralidharan and R.K. Jain, *Nucl. Inst. and Meth. (B)*, 212, 473-476, 2003.
15. **Development of a Large Area Two Dimensional Position Sensitive ΔE -E Detector Telescope for Materials Analysis**, S.V.S.N. Rao, A. Kothari, G.B.V.S. Lakshmi, A. Tripathi, Azher M. Siddiqui, S.A. Khan, A.P. Pathak and D.K. Avasthi, *Nucl. Inst. and Meth. (B)*, 212, 545-550, 2003.
16. **Swift Heavy Ion Induced structural and optical modifications in LiF Thin Films**, M. Kumar, F. Singh, S.A. Khan, V. Baranwal, S. Kumar, D.C. Agarwal, Azher M. Siddiqui, A. Tripathi, A. Gupta, D.K. Avasthi, A.C. Pandey, *Journal of Physics (D): Appl. Phys.*, 38, 1-5, 2005.
17. **Ion Beam Irradiation and Characterization of GaAs Based Hetero-structures**, S. Dhamodaran, N. Satish, A.P. Pathak, S.V.S.N. Rao, Azher M. Siddiqui, S.A. Khan, D.K. Avasthi, T. Srinivasan, R. Muralidharan, C. Muntele, D. Ila, and D. Emfietzoglou, *Nucl. Inst. and Meth. (B)*, 242, 538-541, 2006.
18. **Electrical and spectroscopic Characterization of p-toluene sulphonic acid doped poly (o-toluidine) and poly (o-toluidine) blends**, G.B.V.S. Lakshmi, Vazid Ali, Pawan Kulriya, Azher M. Siddiqui, M. Husain and M. Zulfequar, *Physica B* 392, 259-265, 2007.
19. **Optical Studies of SHI Irradiated Poly (o-Toluidine) – PVC blends**, G.B.V.S. Lakshmi, Vazid Ali, Azher M. Siddiqui, Pawan Kulriya and M. Zulfequar, *Eur. Phys. Jour. Appl. Phys.*, 39 (3), 251-256, 2008.
20. **60 Mev C⁵⁺ Ion Irradiation Effects on Conducting Poly (O-Toluidine)-Poly Vinyl Chloride Blend Films**, G.B.V.S. Lakshmi, Vazid Ali, Azher M. Siddiqui, Pawan Kulriya, M. Husain and M. Zulfequar, *Rad. Eff. & Defects in Solids* 163 (2), 127 – 134, 2008.
21. **Effects of 60 Mev C⁵⁺ Ion Irradiation on Pmt-PVC and P-TSA Doped Pot-PVC Blends**, G. B. V. S. Lakshmi, Azher M. Siddiqui, Vazid Ali, Pawan K Kulriya and M. Zulfequar, *Nucl. Inst. and Meth. (B)*, 266, 1685–1691, 2008.
22. **Studies on Structural, Optical and Cluster Size Of Poly(M-Toluidine)–Polyvinyl Chloride Blends**, G.B.V.S. Lakshmi, Vazid Ali, Azher M. Siddiqui, Pawan K. Kulriya and M. Zulfequar, *Radiation Eff. & Defects in Solids*, 164 (3) 162–169, 2009.
23. **RF-Plasma Polymerization and Characterization of Polyaniline**, G. B. V. S. Lakshmi, Anju Dhillon, Azher M. Siddiqui, M. Zulfequar and D. K. Avasthi, *European Polymer Journal*, 45(10), 2873-2877, 2009.
24. **Optical Characterization of Poly(O-Toluidine) and Pot-PVC Blends**, G. B. V. S. Lakshmi, Vazid Ali, Azher M. Siddiqui and M. Zulfequar, *Macromolecular Symposia (Communicated)*.
25. **Effects of Si⁵⁺ Ion Irradiation on Poly(3-Methyl Thiophene) Films**, G. B. V. S. Lakshmi, Azher M. Siddiqui and M. Zulfequar, *International Journal of Polymeric Materials (Communicated)*.
26. **Irradiation Induced Structural and Optical Changes in Poly(3-Octylthiophene)**, G. B. V. S. Lakshmi, Jai Prakash, Azher M. Siddiqui and M. Zulfequar, *European Polymer Journal (Communicated)*.
27. **Synthesis and Characterization of Thin Films of Poly(3-Methyl Thiophene) by Rf-Plasma Polymerization**, G. B. V. S. Lakshmi, Anju Dhillon, D. K. Avasthi, Azher M. Siddiqui and M. Zulfequar, *Materials Letters (Communicated)*.

C. In Proceedings and Preprints

1. **Ion beam mixing in Au/Si system by Nitrogen ions**, D. K. Sarkar, S. Choudhary, Azher M. Siddiqui, S.K. Sinha, P. Magudapathy, K. Sekar, K.G.M. Nair, S. Panchapakesan, N.S. Thampi and K. Krishan, *Emerging trends of thin films Technology and device fabrication*, 27-29 Nov. 1995, Cochin University of Science and Technology, Cochin, India.
2. **Development of RBS facility with 2MV Tandem Van de Graff accelerator at IGCAR, Kalpakkam**, S.K. Sinha, D.C. Kothari, P. Magudapathy, S. Panchapakesan, Azher M. Siddiqui and K.G.M. Nair, *The 4th National Seminar of Physics and Technology of Particle Accelerator and their Applications (PATPAA)* 26-29 Nov. 1996, IUC-DAEF, Calcutta, India.
3. **Catastrophic Dechanneling Resonance Study of $\text{In}_{0.1}\text{Ga}_{0.9}\text{As}/\text{GaAs}$ Multilayers**, Azher M. Siddiqui and Anand P. Pathak, *Preprint IC/98/168*, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.
4. **Characterization of OMVPE Grown Strained-Layer Superlattices by Ion Channeling**, Azher M. Siddiqui, V.N. Kulkarni, Anand P. Pathak and B.M. Arora, *Preprint IC/98/169*, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.
5. **Swift Heavy Ion Mixing in $\text{In}_{0.12}\text{Ga}_{0.88}\text{As}/\text{GaAs}$ Strained Layer Superlattice**, S.V.S. Nageswara Rao, G.V.B.S. Lakshmi, Azher M. Siddiqui, S. Ghosh, S.K. Srivastava, D.K. Avasthi, R.K. Jain, F. Eichhorn and Anand P. Pathak, *Proc. The Forty fourth DAE Solid State Physics Symposium*, (DAE SSPS 2001), 26-30 December 2001, Bhaba Atomic Research Centre, Mumbai, India, Editors: S.L. Chaplot, P.S.R. Krishna and T. Shakuntala, Conference Proceedings No. **44**, 505-506, 2001.
6. **XRD and FTIR Studies Of P-Toluene Sulphonic acid doped Poly (m-Toluidine) and Poly (m-Toluidine)-PVC Blends**, G.B.V.S. Lakshmi, Vazid Ali, Azher M. Siddiqui and M. Zulfequar, *Proc. of Second International Conference on Electroactive Polymers*, 19-24 February 2007, Goa, University, Goa.
7. **Synthesis of Thin Films of Poly (3-methyl Thiophene) By RF-Plasma Polymerization**, G. B. V. S. Lakshmi, Anju Dhillon, D. K. Avasthi, M. Zulfequar and Azher M. Siddiqui, *Proc. of Third International Conference on Electroactive Polymers*, October 12-17, 2008, Rajasthan University, Jaipur.

D. Contributed Chapters in Books

1. **Channeling and Channeling Radiation in Semiconductor Superlattices**, Anand P. Pathak, Azher M. Siddiqui, L.N.S. Prakash Goteti and V. Harikumar in *Semiconductor Materials and Devices* edited by O.P. Agnihotri and V.K. Jain, *Narosa Publishing House, New Delhi*, 241-258 1998.
2. **Ion Channeling in Semiconductor Superlattices**, Azher M. Siddiqui and Anand P. Pathak in *Condensed Matter Physics* edited by Bal Krishna Agrawal and Hari Prakash, *Narosa Publishing House, New Delhi*, 89-94 1999.
3. **Effects of Defects and Strain on Ion Channeling**, Azher M. Siddiqui, *Physics Teachers*, **43**, S35, 2001.
4. **Theory of Charged Particle Probes to Modern Advanced Materials**, Anand P. Pathak, S.V.S. Nageswara Rao, Azher M. Siddiqui, L.N.S. Prakash Goteti and G.B.V.S. Lakshmi in *Accelerator Based Research in Basic and Applied Sciences* edited by Amit Roy and D.K. Avasthi, *Phoenix Publishing House Pvt. Ltd, New Delhi*, 173-184, 2002.

E. Popular Article

- **Ion Beam Channeling Studies and Accelerator Programmes in India**, Azher M. Siddiqui and Sameen Ahmed Khan, MRSI Newsletters, Vol. **B 02**, No. 4, 3-5, 2002.