

# Curriculum Vitæ

**Dr. Abu M. Khan**

Associate Professor

Department of Mathematics and Physics

North South University

(Date: February 10,2016)

Home Address:  
F# 3A, H# 574, Road # 8  
Baitul Aman Housing Society  
Adabor, Dhaka - 1207

Office: SAC 1020. Ext. 1542  
Email: [abu.khan@northsouth.edu](mailto:abu.khan@northsouth.edu)  
Cell: + (880) 184 711 7967  
+(880) 153 452 3348

## • Professional Interest

---

My professional interest is two-fold: teaching and research. The best way to achieve this is to work in an academic institution. In the context of our society, teaching is more important because of the need for modernization of the academic environment in our country. That's why I spend few years after completion of my PhD studies in teaching in a university in USA so that I can learn how to improve the teaching method and academic curriculum. The experience I earned in teaching has an immense effect on me. I understand and feel how important it is to have a very good academic curriculum which eventually leads to advancement in research. Without quality teaching and academic curriculum, it is not possible to build a good research environment and hence society.

## • Educational/Academic Qualifications: From latest to earliest

---

Degree	Subject/Specialization	Institution	Year
Ph.D. (Thesis adviser: Professor P. Ramond)	High energy and Mathematical Physics	University of Florida Department of Physics P.O. Box 118440 Gainesville, FL 32611-8440, USA	2004
Advances Study in Mathematics (Master's degree)	Part-III of the Mathematical Tripos	Applied Mathematics and Theoretical Physics University of Cambridge Cambridge, UK	1998
DICTP	High Energy Physics	The Abdus Salam International Centre for Theoretical Physics Trieste, Italy	1995
M.Sc. (Thesis) (1 <sup>st</sup> class, 2 <sup>nd</sup> position)	Physics	University of Dhaka Dhaka -1000	1994
B.Sc.(Hons.) (1 <sup>st</sup> class, 3 <sup>rd</sup> position)	Physics	University of Dhaka Dhaka -1000	1992
H.S.C. (1 <sup>st</sup> Division)	Science	Notre Dame College Dhaka, Bangladesh	1986
S.S.C. (1 <sup>st</sup> Division)	Science	Dhaka Collegiate School Dhaka, Bangladesh	1984

---

• **Teaching Experiences: More than 16 years of service**

I worked as a full-time physics faculty in different academic institutions, both at the national and international levels. The details are given below starting from the latest to the earliest:

Position	Institution & Duration	Subject taught	Evaluation
Associate Professor (11 months)	North South University Bashundhara, Dhaka. (March 18, 2015 - Current)	Calculus-I, Linear Algebra and Engineering Mathematics.	Average standing 4.5 for Fall 2013 and Spring 2014 semesters (Excellent)
Assistant Professor (1 year and 6 months)	North South University Bashundhara, Dhaka. (September 29, 2013 - March 17, 2015)	Pre-Calculus, General Physics-I & II and Engineering Mathematics.	Average standing 4.5 for Fall 2013 and Spring 2014 semesters (Excellent)
Associate Professor (2 year and 3 months)	BRAC University Mohakhali, Bangladesh. (May 2011 - August 2013)	Quantum Mechanics, Thermodynamics, Statistical mechanics, Quantum Physics of Atoms, Solids & Nuclei, Principles of Physics-I & II, Fundamentals of Physics, Electrodynamics	Average student evaluation = 90%
	BRAC University Mohakhali, Bangladesh. (June 2010 - May 2011)	Thermodynamics, Quantum Physics of Atoms, Solids & Nuclei, Principles of Physics-I & II, Fundamentals of Physics.	Average student evaluation = 90%
Assistant Professor (10 years & 9 months)	Georgia Southern University Department of Physics Statesboro, GA 30460-8031 (August 2005 - July 2008)	Principles of Physics-I & II, Introduction to Physics-I & II including the associated laboratory classes .	Average student evaluation = Very Good
	University of Chittagong Department of Physics Chittagong, Bangladesh (August 1998 - June 2005)	Mechanics, Sounds, Optics, Mathematiucal Physics, Field Theory and laboratory classes	Not available
Lecturer (2 years & 3 months)	University of Chittagong Department of Physics Chittagong, Bangladesh (May 1996 - August 1998)	Mechanics, Sounds, Optics, Mathematiucal Physics, Field Theory and laboratory classes	Not available
Teaching and Research Assistant	University of Florida Department of Physics Gainesville, FL 32611-8440, USA	Laboratory classes for Fall and Spring semesters, and research during summer semesters each year from 1999 up to 2004.	Very Good.

• **Publications**

- Abu M Khan: Continuous Spin Representation by Contraction of Conformal Algebra, *Proceedings of the 18<sup>th</sup> International Mathematics Conference*, p.102, 20-22 March, held at IUB (2014).
- L. Brink, Abu M. Khan, P. Ramond and X. Xiong: Continuous Spin Representations of the Poincaré and Super-Poincaré Groups, *J.Math.Phys.* **43**, 6279 (2002).
- Abu M. Khan and Pierre Ramond: Continuous Spin Representations from Group Contractions, *Journal of Mathematical Physics*, **46**, 053515 (2005), Erratum-ibid. **46**, 079901 (2005).
- A.M.A.S. Khan, K.A. Kabir and S. Begum: Vertex Renormalization Effects in Low Energy Pion-Nucleus Optical Potential, *Nuclear Science and Applications*, **Vol.5, No.1-2**, 73, 1996, Dhaka, Bangladesh.

• **Conferences**

- BMS-IUB International Mathematics Conference, IUB, Bashundhara, Dhaka, 20-22 March, 2014.
- Invited talk: 12<sup>th</sup> Chittagong Conference on Mathematical Physics, 16-17 March, 2014, held at RCMPs University of Chittagong, Bangladesh.
- TASI Summer School in Theoretical Physics (Particle Physics and Cosmology), Boulder, Colorado, USA: The quest for Physics Beyond the Standard Models, University of Colorado at Boulder, June 2-28, 2002.

- HEP Summer School, Abdus Salam ICTP, Trieste, Italy, 1994-1995: Particle Physics and Cosmology, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, September 1994-August 1995.
- BCSPIN Summer School in High Energy physics, Kathmundu, Nepal, 1994.

---

- **Current Research Projects**

- Working on dynamical properties of Oscillon.
- Contraction of Conformal algebra and its consequences on physical states.

---

- **Professional and Administrative Services**

- Member of the Committee for Academic Affair, BRAC University, since January 2012.
- External Examiner and Moderator of the 2010-2011 academic year examination committee, Department of Theoretical Physics, University of Dhaka.
- External Examiner and Moderator of the 2009-2010 academic year examination committee, Department of Theoretical Physics, University of Dhaka.
- External Examiner of the 2007-2008 academic year general and thesis viva for the MS degree at the Department of Theoretical Physics, University of Dhaka. The examination was held on October 30, 2010.
- Convener of Final Examination: I served as the Convener of the Departmental Scrutinizing Committee for the MNS Department, BRAC University for Spring semester 2011. The responsibilities were to verify the final grades, checking the markings of the exam papers and entering the grades of the courses in the registration software.
- Course Committees: I have been serving as a member of the Course Committee for the Physical Science section of the MNS Department from Spring 2011 semester as per the requirement of the Private University ACT 2010.
- Member of ‘Studio Physics/E-course’ project at the Georgia Southern University from 2007-2008. The aim was to prepare the infrastructure and course curriculum for studio based physics courses.

---

- **Thesis/Desertation Supervision**

- Independently supervised a M.S. student from Jagannath University, Dhaka, to complete his Master’s thesis (2014).
- Collaborated with Professor Dr. Arshad Momen and Dr. Md.Tanvir Hanif, Department of Theoretical Physics, University of Dhaka, to guide two students for their M.S. thesis (2012).

---

- **Dissertations/Thesis**

- “The Continuous Spin Representations of the Poincaré and Super-Poincaré Groups and Their Construction by the Inönü-Wigner Group Contraction”, dissertation submitted in partial fulfillment of the requirements for the Ph.D. degree at the University of Florida, December 2004.
- “The Geometry of Killing Spinor Equations”, Part III essay, as part for the completion of the Master’s degree at the University of Cambridge, UK., May 1998.
- “CP Violation in Lepton Sector”, dissertation submitted in partial fulfillment of the requirements for the DICTP at the Abdus Salam International Centre for Theoretical Physics, August 1995.
- “Pion-Nucleon Scattering Amplitude”, dissertation submitted as part of the requirement for the fulfillment for the M.Sc. degree at the University of Dhaka, Bangladesh., 1994.

---

- **Seminars**

- “No-Go theorem and the supersymmetry”, GSS Seminar at the Department of Physics, University of Florida, December, 2002.
- “Super-Poincaré groups and the Continuous spin representation”, seminar presented at the Department of Physics, Georgia Southern University, March 2006.

---

- **Computer Skills**

L<sup>A</sup>T<sub>E</sub>X<sub>2</sub>e word processing, Xfig drawing tools, Maple, Mathematica, MS Word, Excel, Powerpoint.

• References

---

1. Dr. Pierre Ramond  
Distinguished Professor of Physics  
Department of Physics  
University of Florida  
P.O. Box 118440  
Gainesville, FL 32611-8440, USA  
Email: ramond@phys.ufl.edu  
Tel: +1-352-392-5704
2. Dr. Khandker A Muttalib  
Professor of Physics  
Department of Physics  
University of Florida  
P.O. Box 118440  
Gainesville, FL 32611-8440, USA  
Email: muttalib@phys.ufl.edu  
Tel: +1-352-392-6699
3. Dr. Mark Edwards  
Professor of Physics  
Department of Physics  
Georgia Southern University  
P.O. Box 8031  
Statesboro, GA 30460-8031, USA  
Email: edwards@georgiasouthern.edu  
Tel: +1-912-681-5616
4. Professor Dr. Khorshed Ahmed Kabir  
Chair, Department of Nuclear Engineering  
University of Dhaka  
Dhaka - 1000  
Bangladesh  
Tel: 0171 595 4769

Signature: \_\_\_\_\_

Date: \_\_\_\_\_