

CURRICULUM VITAE OF
DR. MD. ATIQR RAHMAN PATOARY

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✚ Career objective:

To build up career in teaching and research

✚ Personal details:

- Name : Md. Atiqur Rahman Patoary
- Father's name : Md. Monsur Ali Patoary
- Mother's name : Mst. Alaya Begum
- Date of birth : 1st October, 1980
- Place of birth : Kurigram, Bangladesh
- Sex : Male
- Marital status : Married
- Religion : Islam
- Blood group : O +Ve
- Nationality : Bangladeshi (by birth)

✚ Educational background:

Doctor of Philosophy (PhD) (Condensed Matter Physics)	Completed three years PhD course from the Department of Physics and Earth Sciences, Faculty of Science, University of the Ryukyus, Japan in 2013.
Thesis Title	Theoretical Study of Momentum Dependent Local-Ansatz Variational Approach to Correlated Electron System
Thesis Supervisor	Emeritus Professor Yoshiro Kakehashi, Department of Physics and Earth Sciences, Faculty of Science, University of the Ryukyus, Japan.

M.Sc. in Physics (Condensed Matter Physics)	Completed two years M.Sc. course from the Department of Physics and Earth Sciences, Faculty of Science, University of the Ryukyus, Japan in 2010 and obtained A grade (90~100) in all subject.
Subject Studied	Advanced Seminar, Thesis Research, Theory of Dielectrics, Electron Theory for Structures of Solids, Foundations of Quantum Mechanics, Quantum Theory in Solids, Non-equilibrium Physics, Introduction to Physics of Materials, Elementary Excitation in Solid State Physics and Manner of Science and Education I.
Thesis Title	A Momentum Dependent Variational Ansatz to Correlated Electrons in Solids.
Thesis Supervisor	Emeritus Professor Yoshiro Kakehashi, Department of Physics and Earth Sciences, Faculty of Science, University of the Ryukyus, Japan.
Institutional media	English.

M.Sc. in Physics (Nuclear Physics)	Completed one year M.Sc. course from the Department of Physics, Faculty of Science, University of Rajshahi, Bangladesh, in 2002 (examination held in 2004) and secured First class (First position) with 72.1% marks.
Subject Studied	Advanced Nuclear Physics, Advanced Medical Physics, Advanced Materials Sciences, Electronic Communications, Physics of Environment and Thesis.
Thesis Title	Non-monotonic potential for α - ^{16}O elastic scattering in the energy range 25.4 to 146.0 MeV.
Thesis Supervisor	Emeritus Professor A K Basak and Professor Abdus Salam Mondol, Department of Physics, University of Rajshahi, Bangladesh.
Institutional media	English
B.Sc. (Honours)	Completed four years B.Sc. (Honours.) course from the Department of Physics, Faculty of Science, University of Rajshahi in 2001 (held in 2002) and secured First class (Third position) with 62.1 % marks.
1 st year course	Functional English for Physicist, Mechanics, Electromagnetism, Vibrations and Waves, Mathematical methods in physics-I, Differential & Integral Calculus, Inorganic and Organic Chemistry, Statistics.
2 nd year course	Optics, Thermal Physics, Classical Mechanics, Mathematical methods in physics-II, Algebra & Geometry, Physical Chemistry, Computer fundamentals & Programming.
3 rd year course	Electrodynamics, Atomic & Molecular Physics, Basic Nuclear Physics, Basic Solid State Physics, , Electronics, Basic Quantum Mechanics and Relativity , Statistical Mechanics, Numerical methods & computations.
4 th year course	Quantum Mechanics, Pulse and Digital Electronics, Nuclear and particle Physics, Solid-state Physics and material sciences, Medical and radiation Physics, Crystallography & Spectroscopy, Reactor Physics, Non-Conventional Energy.
Institutional media	English
Higher Secondary School Certificate	Passed Higher Secondary Certificate examination (two years) from Carmichael College, Rangpur under Rajshahi Education Board, Bangladesh in 1997 and obtained First division with 62.1% marks.
Subject studied	Bengali (Language and Literature), English (Language and Literature), Physics, Chemistry, Mathematics and Biology (Botany and Zoology).
Secondary School Certificate	Passed Secondary School Certificate examination (ten years) from Pangarani Laxmipria High School, Kurigram, Bangladesh in 1995 and obtained First division with 81.8% marks.
Subject studied	Bengali (Language and Literature), English (Language and Literature), General Science, Islamic studies, Mathematics (General and Higher) and Geography.

Professional experience:

- Professor, Department of Physics, University of Rajshahi, Rajshahi-6205, Bangladesh. From 02/10/2019 to date.
- Associate Professor, Department of Physics, University of Rajshahi, Rajshahi-6205, Bangladesh. From 15/04/2014 to 01/10/2019.
- Assistant Professor, Department of Physics, University of Rajshahi, Rajshahi-6205, Bangladesh. From 25/09/2007 to 14/04/2014.
- Lecturer, Department of Physics, University of Rajshahi, Rajshahi-6205, Bangladesh. From 25/09/2004 to 24/09/2007.

Administrative Experience:

- House Tutor of Mudar Bux Hall, University of Rajshahi from November 2007 to September 2008.

Subject Taught:

- Mechanics, Properties of matter, Wave and Sound (1st Year)
- Numerical Methods (2nd Year)
- Quantum Mechanics-I and Relativity (3rd Year)
- Basic Quantum Mechanics (3rd Year)
- Electrodynamics (3rd Year)
- Nuclear and Particle Physics (4th Year)
- Reactor Physics (4th Year)
- Physics of Environment (M.Sc Final Year)
- Advanced Reactor Physics (M.Sc Final Year)
- Cosmology (M.Sc Final Year)

Publications in International Journals:

1. A. K. F. Haque, M. A. Uddin, **M. A. R. Patoary**, A. K. Basak, M. R. Talukder and B. C. Saha. *Generalized Kolbenstvedt model for electron impact ionization of K-, L- and M-shell atoms*. Eur. Phys. J. D **42** (2007) 203.
2. M. R. Talukder, S. Bose, **M. A. R. Patoary**, A. K. F. Haque, M. A. Uddin, A. K. Basak, and M. Kando. *Empirical model for electron impact ionization cross sections of neutral atoms*. Eur. Phys. J. D **46** (2008) 281.
3. **M. A. R. Patoary**, M. Alfaz Uddin, A. K. F. Haque, A. K. Basak, M. R. Talukder, K. R. Karim and B. C. Saha. *Electron Impact K-shell Ionization Cross Sections of Atoms at Relativistic Energies*. Int. J. Quan. Chem. **108** (2008) 1023.
4. **M. A. R. Patoary**, M. Alfaz Uddin, A. K. F. Haque, M. Shahjahan, A. K. Basak and B. C. Saha. *Binary encounter model for the electron impact K-shell ionization of atoms*. Int. J. Quan. Chem. **108** (2008) 1326.
5. **M. A. R. Patoary**, M. Alfaz Uddin, A. K. F. Haque, M. Shahjahan, A. K. Basak, M. R. Talukder, and B. C. Saha. *Empirical model for the electron impact K-shell ionization cross-sections of atoms*. Int. J. Quan. Chem. **109** (2009) 897.
6. A. K. F. Haque, M. S. I. Sarker, **M. A. R. Patoary**, M. Shahjahan, M. Ismail Hossain, M. Alfaz Uddin, A. K. Basak, and B. C. Saha. *Modified Version of Revised Deutsch–*

- Märk Model for Electron Impact K-Shell Ionization Cross-Sections of Atoms at Relativistic Energies.* Int. J. Quan. Chem. **109** (2009) 1442.
7. Y. Kakehashi, **M. A. R. Patoary**, and Toshihito Tamashiro. *Evidence of Strong Electron Correlations in γ -Iron.* J. Phys. Soc. Jpn, **78** (2009) 093705.
 8. A. K. F. Haque, M. Shahjahan, M. A. Uddin, **M. A. R. Patoary**, A. K. Basak, B. C. Saha, and F. B. Malik. *Generalized Kolbenstvedt model for electron impact ionization of the K-, L- and M-shell ions.* Phys. Scr. **81** (2010) 045301.
 9. Y. Kakehashi, **M. A. R. Patoary**, T. Tamashiro, *Dynamical coherent-potential approximation approach to excitation spectra in 3d transition metals.* Phys. Rev. B **81** (2010) 245133.
 10. Y. Kakehashi, Toshihito Tamashiro, **M. A. R. Patoary**, and T. Nakamura. *First-principles dynamical CPA to finite temperature magnetism of transition metals.* J. Phys.: Conf. Ser. **200** (2010) 032030.
 11. **M. A. R. Patoary**, M. Alfaz Uddin, A. K. F. Haque, M. Shahjahan, A. K. Basak, and B. C. Saha. *Electron Impact Ionization in K-, L-, and M-Shells of Atomic Targets.* Int. J. Quan. Chem. **111** (2011) 923.
 12. Y. Kakehashi, **M. A. R. Patoary**. *First-Principles Dynamical Coherent-Potential Approximation Approach to the Ferromagnetism of Fe, Co, and Ni.* J. Phys. Soc. Jpn. **80** (2011) 034706.
 13. Y. Kakehashi, **M. A. R. Patoary**. *Ferromagnetism of transition metals and screened exchange interactions.* Phys. Rev. B. **83** (2011) 144409.
 14. **M. A. R. Patoary**, Y. Kakehashi. *Momentum Dependent Local-Ansatz Approach to Correlated Electron Systems: Non Half-Filled Case.* J. Phys. Soc. Jpn. **80** (2011) 114708.
 15. **M. A. R. Patoary**, Y. Kakehashi. *Momentum-Dependent Variational Approach to Correlated Electron System.* J. Phys.: Conf. Ser. **391** (2012) 012164.
 16. **M. A. R. Patoary**, Sumal Chandra, and Y. Kakehashi. *Momentum Dependent Local-Ansatz Wavefunction from Weak to Strong Electron Correlations.* J. Phys. Soc. Jpn. **82** (2013) 013701.
 17. Y. Kakehashi, **M. A. R. Patoary**, Sumal Chandra, *Nonlocal Excitations and 1/8 Singularity in Cuprates.* J. Korean Phys. Soc. **62** (2013) 1827.
 18. **M. A. R. Patoary**, Y. Kakehashi. *Momentum Dependent Local-Ansatz with Hybrid Wavefunction from Weak to Strong Electron Correlations.* J. Phys. Soc. Jpn. **82** (2013) 084710.
 19. Yoshiro Kakehashi and Sumal Chandra, Derwyn Rowlands, **M. Atiqur R. Patoary**. *Momentum-dependent local ansatz approach to correlated electrons.* Modern Physics Letters B **28** (2014) 1430007.
 20. B. C. Saha, A. K. F. Haque, **M. Atiqur R. Patoary**, M. A. Uddin and A. K. Basak. *Theoretical electron impact ionization cross sections for atomic and ionic targets for $E \leq 10$ keV.* J. Phys.: Conf. Ser. **635** (2015) 082004.
 21. A. K. F. Haque, M. Alfaz Uddin, **M. A. R. Patoary**, A. K. Basak and B. C. Saha. *Electron impact M-subshell ionization of atoms at relativistic energies.* J. Phys.: Conf. Ser. **635** (2015) 052080.

22. A.K.F. Haque, **M. Atiqur R. Patoary**, M. A. Uddin, A. K. Basak, and B. C. Saha. *Ion impact Stopping Cross Sections for Various Media (Z=3 - 100)*. Molecular Physics 114 (2016) 356.
23. A.K. Fazlul Haque, **M. Atiqur R. Patoary**, M. Alfaz Uddin, Arun K. Basak and Bidhan C. Saha. *Electron impact atomic and ionic ionization: Analytical, semi-empirical and semiclassical methods*. In: Philip E. Hoggan and Telhat Ozdogan, editors, Advances in Quantum Chemistry, 73 (2016) Chapter 18 363-414, Burlington: Academic Press.
24. M. Ismail Hossain, A.K.F. Haque, **M.A.R. Patoary**, M. A. Uddin, A.K. Basak. *Elastic scattering of electrons and positrons by atomic magnesium*. Eur. Phys. J. D. **70** (2016) 41:1-9.
25. A. K. Fazlul Haque, **M. Atiqur R. Patoary**, M. Alfaz Uddin, Arun K. Basak, M. Ismail Hossain, Mahmudul Hasan, Bidhan C. Saha, M. Maaza. *Electron impact stopping powers for elemental and compound media*. Vacuum **132** (2016) 123-129.
26. A.K.F. Haque, M. Ismail Hossain, M. Alfaz Uddin, **M. Atiqur R. Patoary**, A. K. Basak, M. Maaza and B. C. Saha. *Elastic scattering of electrons and positrons by cadmium atoms*. Molecular Physics. 115 (2017) 566-578.
27. A. K. F. Haque, M. Maaza, M. A. Uddin, **M. Atiqur R. Patoary**, M. Ismail Hossain, A. K. Basak, B. C. Saha and M. Selim Mahbub. *Electron impact ionization of individual sub-shells and total of L and M shells of atomic targets with Z = 38 – 92*. J. Phys. B: At. Mol. Opt. Phys. 50 (2017) 055005.
28. **M. Atiqur R. Patoary**, A.K.F. Haque, M. Ismail Hossain, M.A.Uddin, and A.K. Basak. *An Analytical Model for The Electron Impact K-Shell Ionization Cross Sections of Atoms*. Int. J. Mass. Spectrometry 415 (2017) 1–8.
29. A. K. Fazlul Haque, M. M. Haque, **M. Atiqur R. Patoary**, M. Alfaz Uddin, M. Ismail Hossain, M. Selim Mahbub, Arun K. Basak, M. Maaza, Bidhan C. Saha *Electron impact secondary electron emissions from elemental and compound solids*. Vacuum 141 (2017) 192-209
30. A K F Haque, M M Haque, Prajna P Bhattacharjee, M Alfaz Uddin, M Atiqur R Patoary, M Ismail Hossain, A K Basak, M Selim Mahbub, M Maaza, and B C Saha. *Relativistic calculations for spin-polarization of elastic electron-mercury scattering*. J. Phys. Commun. 1 (2017) 035014.
31. A. K. F. Haque, M. A. Uddin, A. K. Basak, B. C. Saha, M. Maaza, **M. A. R. Patoary**, M. M. Haque, and M. Ismail Hossain. *Electron impact secondary electron emissions from atomic and molecular solid targets*. J. Phys.: Conf. Se 875 (2017) 072001.
32. B. C. Saha, A. K. Basak, M. A. Uddin, A. K. F. Haque, **M. A. R. Patoary**, M. M. Haque, M. Ismail Hossain, and M. Maaza. *Electron impact L and M-subshell ionization cross sections for atoms ($14 \leq Z \leq 92$) including the relativistic effects*. J. Phys.: Conf. Ser. 875 (2017) 052001.
33. M. Elias Hosain, **M. Atiqur R. Patoary**, M. M. Haque, A.K.F. Haque, M. Ismail Hossain, M. Alfaz Uddin, A. K. Basak, M. Maaza and B. C. Saha. *Elastic scattering of e^{\mp} by Na atoms*. Molecular Physics. 116 (2018) 631-648.
34. A. K. Fazlul Haque, Maaza, M.M. Haque, **M. Atiqur R. Patoary**, M. Alfaz Uddin, M. Ismail Hossain, M. Selim Mahbub, Arun K. Basak, Bidhan C. Saha. *Electron impact*

- ionization cross sections for inner L- and M -subshells of atomic targets at relativistic energies.* In: John R. Sabin, Erkki J. Brändas, editors, *Advances in Quantum Chemistry* 77 (2018) Chapter 3, 121-165, Burlington: Academic Press.
35. **M. Atiqur R. Patoary**, A.K. Fazlul Haque, M. Alfaz Uddin, Sanjida Sultana, M. Shorifuddoza, M. Monirul Haque and M. Maaza. *Electron impact L-subshell and total L-shell ionization cross-sections of atoms (Z=18-92).* Phys. Scr. 93 (2018) 115401.
 36. M. M. Haque, A.K.F. Haque, Prajna P. Bhattacharjee, M. Alfaz Uddin, **M. Atiqur R. Patoary**, A. K. Basak, M. Maaza and B. C. Saha. Relativistic treatment of scattering of electrons and positrons by mercury atoms. *Molecular Physics.* 117 (2019) 2303-2319.
 37. A.K.F. Haque, M. M. Haque, M. Ismail Hossain, **M. Atiqur R. Patoary**, M. Sohag Hossain, M. Maaza, A. K. Basak, B. C. Saha, M. Alfaz Uddin. *A study of the critical minima and spin polarization in the elastic electron scattering by the lead atom.* J. Phys. Commun. 2 (2018) 125013.
 38. M. M. Haque, A. K. F. Haque, D. H. Jakubassa-Amundsen, **M. Atiqur R. Patoary**, A. K. Basak, M. Maaza, B. C. Saha, M. Alfaz Uddin. e^\pm -Ar scattering in the energy range $1 \text{ eV} \leq E_i \leq 0.5 \text{ GeV}$. J. Phys. Commun. 3 (2019) 045011.
 39. A. K. Fazlul Haque, M. M. Haque, Sanjida Sultana, **M. Atiqur R. Patoary**, M. Sohag Hossain, M. Maaza, M. Alfaz Uddin, Proton-induced secondary electron emission from elemental solids over the energy domain 1 keV–1000 MeV. *Result in Physics* 15 (2019) 102519.
 40. M. Shorifuddoza, **M. Atiqur R. Patoary**, D. H. Jakubassa-Amundsen, A. K. F. Haque, M. Alfaz Uddin. Scattering of e^\pm from ytterbium atoms. *Eur. Phys. J. D* 73 (2019) 164.
 41. Sanjida Afroz, M.M. Haque, A.K. Fazlul Haque, D.H. Jakubassa-Amundsen, **M. Atiqur R. Patoary**, M. Shorifuddoza, Mahmudul H. Khandker, M. Alfaz Uddin. Elastic scattering of electrons and positrons from ^{115}In atoms over the energy range 1 eV–0.5 GeV. *Result in Physics* 18 (2020) 103179.
 42. M A R Patoary, M Shorifuddoza, A K F Haque and M A Uddin. *Ionization cross-sections of L-shell and L-subshells by electron impact.* J. Phys.: Conf. Ser. 1412 (2020) 152008.
 43. A. K. F. Haque, M. Shorifuddoza, M. A. R. Patoary and M. A. Uddin. *Scattering of e^\mp from H_2O .* J. Phys.: Conf. Ser. 1412 (2020) 182004.
 44. M. M. Haque, A. K. Fazlul Haque, M. Alfaz Uddin, M. Maaza, M. Atiqur R. Patoary, A. K. Basak, Bidhan C. Saha. *Elastic Scattering of e^\pm by Cd, Hg and Pb Atoms at $1 \text{ eV} \leq E_i \leq 1 \text{ GeV}$.* In: Erkki J. Brändas, editors, *Advances in Quantum Chemistry*, 84 (2021) Chapter 1, 1-72, Burlington: Academic Press.
 45. R. Hasan, M. M. Haque, A.K.F. Haque, M. Shorifuddoza, Mahmudul H. Khandker, M. Atiqur R. Patoary, A. K. Basak, M. Maaza, B. C. Saha, M. Alfaz Uddin, *Relativistic study on the scattering of electrons and positrons from atomic iron at energies $1 \text{ eV} - 10 \text{ keV}$.* *Molecular Physics* 119 (2021) e1849838.
 46. R. Hassan, M. Nure Alam Abdullah, M. Shorifuddoza, Mahmudul H. Khandker, M. A. R. Patoary, M. M. Haque, Pretam K. Das, M. Maaza, M. Masum Billah, A. K. F. Haque,

- M. Alfaz Uddin, *Scattering of e^{\pm} off silver atom over the energy range 1 eV–1 MeV*. The European Physical Journal D 75 (2021) 204.
47. M. Mousumi Khatun, M.M. Haque, M. Atiqur R. Patoary, M. Shorifuddoza, Mahmudul H. Khandker, A.K. Fazlul Haque, Hiroshi Watabe, M. Alfaz Uddin. Theoretical study of e^{\pm} scattering by the Au atom. Result in Physics 29 (2021) 104742.
48. Nira Akter, M. Nure Alam Abdullah, M. Shorifuddoza, M. Atiqur R. Patoary, M. Masum Billah, Mahmudul H. Khandker, M. Maaza, Hiroshi Watabe, A. K. F. Haque, M Alfaz Uddin. Theoretical study of e^{\pm} -NH₃ scattering. Molecular Physics 120 (2022) e2097135.

Publications in Home Journals:

1. M. J. A. Sarker, A. K. F. Haque, **M. A. R. Patoary** and M. A. Islam. *Measurement of Indoor and Outdoor Environmental Alpha Particles Concentration in the Rajshahi University Campus*. Rajshahi University Journal of Science **35** (2007) 1.

List of Presentations:

1. Bidhan Saha, M. A. R. Patoary, M. Alfaz Uddin, A. K. F. Haque and Arun K. Basak. Inner-shell Ionization with Relativistic Corrections by Electron Impact. Bulletin of the American Physical Society, Volume 52 (2007), Number 7. 38th Annual Meeting of the Division of Atomic, Molecular, and Optical Physics, June 5–9, 2007; Calgary, Alberta, Canada.
2. B. C. Saha, A. K. Basak, M. A. Uddin and M. A. R. Patoary. K-shell ionization of neutral targets by electron impact. 48th Sanibel Symposium, University of Florida, February 21-26, 2008.
3. M. A. R. Patoary, M. Alfaz Uddin, A.K.F. Haque, A.K. Basak, and B.C. Saha. Electron impact K-shell Ionization of Atoms ($2 < Z < 92$). Bulletin of the American Physical Society, Volume 53 (2008), Number 2. APS March Meeting March 10–14, 2008; New Orleans, Louisiana, USA.
4. B. C. Saha, A. K. Basak, M. A. Uddin and M. A. R. Patoary. Electron impact K-shell ionization of atomic targets. Bulletin of the American Physical Society, Volume 53 (2008), Number 7. 39th Annual Meeting of the Division of Atomic, Molecular, and Optical Physics, May 27–31, 2008; State College, Pennsylvania.
5. M.A.R. Patoary, M. Alfaz Uddin, A.K.F. Haque, M. Shahjahan, A.K. Basak, M.R. Talukder and Bidhan Saha. Electron Impact K-shell Ionization Cross Sections. Bulletin of the American Physical Society, Volume 53 (2008), Number 10. 61st Annual Gaseous Electronics Conference October 13–17, 2008; Dallas, Texas, USA.
6. A.K.F. Haque, M.S.I. Sarker, M.A.R. Patoary, M. Shahjahan, M. Ismail Hossain, M. Alfaz Uddin, A.K. Basak and Bidhan Saha. Electron Impact K-shell Ionization Cross Sections at high energies. Bulletin of the American Physical Society, Volume 53 (2008), Number 13. 75th Annual Meeting of the Southeastern Section of APS, October 30–November 1, 2008; Raleigh, North Carolina, USA.

7. M. A. R. Patoary, M. A. Uddin, A. K. F. Haque, M. Shahjhan, A. K. Basak, ^[SEP]and B. C. Saha^[SEP]. Electron Impact ionization of Ionic targets. 49th Sanibel Symposium, King and Prince Golf Resort, St. Simons Island, GA, Feb 26, 2009.
8. A.K.F. Haque, M.S.I. Sarker, M.A.R. Patoary, M. Shahjahan, M.I. Hossain, M.A. Uddin, A.K. Basak and B.C. Saha. K-Shell Ionization of Neutral Targets by Electron Impact. Bulletin of the American Physical Society, Volume 54 (2009), Number 1. APS March Meeting March 16–20, 2009; Pittsburgh, Pennsylvania, USA.
9. Y. Kakehashi, M. A. R. Patoary and T. Shimabukuro. A New Type of Local Ansatz Wavefunction to Correlated Electron System. Int. National Conf. of Magnetism (Karlsruhe, Germany), July 27, 2009. Abstract page-129.
10. ***M. A. R. Patoary** and Y. Kakehashi. Gutzwiller-Type Variational Theory of Electron Correlations with Momentum-Dependent Parameters. Autumn Meeting in the Physical Society of Japan (Kumamoto, Japan), September 28, 2009. Abstract Volume **64**, Issue 2, Part 2, page-225 (ISBN 1342-8349).
11. Y. Kakehashi, Toshihito Tamashiro, **M. A. R. Patoary**, and T. Nakamura. First-principles dynamical CPA calculations of transition metals magnetism: Case of Co. Autumn Meeting in the Physical Society of Japan (Kumamoto, Japan), September 27, 2009. Abstract Volume **64**, Issue 2, Part 3, page-374 (ISBN 1342-8349).
12. ***M. A. R. Patoary** and Y. Kakehashi. Local-Ansatz Approach to Electron Correlations with Momentum-Dependent Parameters. The Fourth General Meeting of ACCMS-VO (Asian Consortium on Computational Materials Science - Virtual Organization), Sendai and Matsushima, Japan, January 12-14, 2010, Page-PS-57.
13. ***M. A. R. Patoary** and Y. Kakehashi. Improved Gutzwiller-Type Variational Theory of Electron Correlations with Momentum-Dependent Parameters. Spring Meeting in the Physical Society of Japan (Okayama, Japan), March 21, 2010. Abstract Volume **65**, Issue 1, Part 2, page-317 (ISBN 1342-8349).
14. Y. Kakehashi, **M. A. R. Patoary**, and T. Tamashiro. First-principles dynamical CPA calculations on γ -Fe and γ -MN. Spring Meeting in the Physical Society of Japan (Okayama, Japan), March 22, 2010. Abstract Volume **65**, Issue-1, Part 3, page-483 (ISBN 1342-8349).
15. ***M. A. R. Patoary** and Y. Kakehashi. Momentum-Dependent Local-Ansatz Approach to Correlated Electron System. Autumn Meeting in the Physical Society of Japan (Osaka Prefecture University, Japan), September 24, 2010. Abstract Volume **65**, Issue 2, Part 2, page-251 (ISBN 1342-8349).
16. Y. Kakehashi, **M. A. R. Patoary**, and T. Tamashiro. Dynamical CPA Approach to Systematic Change of Excitation Spectra in $3d$ Transition Metals. Autumn Meeting in the Physical Society of Japan (Osaka Prefecture University, Japan), September 25, 2010. Abstract Volume **65**, Issue-2, Part 3, page-393 (ISBN 1342-8349).
17. ***M. A. R. Patoary** and Y. Kakehashi. A Variational Approach with Momentum-Dependent Parameters to Correlated Electron System. Workshop at Ryukyu University, Japan, December 11, 2010.
18. ***M. A. R. Patoary** and Y. Kakehashi. Electron Correlations with Momentum-Dependent Variational Approach. Spring Meeting in the Physical Society of Japan

- (Niigata University, Japan), March 28, 2011. Abstract Volume **66**, Issue 1, Part 2, page-350 (ISBN 1342-8349).
19. Y. Kakehashi, **M. A. R. Patoary**. First-Principles Dynamical CPA Study of Itinerant Ferromagnetism and Hund's Rule Coupling. Spring Meeting in the Physical Society of Japan (Niigata University, Japan), March 25, 2011. Abstract Volume **66**, Issue-1, Part 3, page-453 (ISBN 1342-8349).
 20. ***M. A. R. Patoary** and Y. Kakehashi. Momentum-Dependent Local-Ansatz Approach to Strongly Correlated Electron System. International Conference on Strongly Correlated electron System (SCES 2011, University of Cambridge, UK), 29th August ~3rd September 2011, Number-243, Page-84.
 21. Y. Kakehashi, **M. A. R. Patoary**. First-Principles Dynamical CPA Study of Itinerant Magnetism and Hund's Rule Coupling. International Conference on Strongly Correlated electron System (SCES 2011, University of Cambridge, UK), 29th August ~3rd September 2011, Number-237, Page-83.
 22. Y. Kakehashi, **M. A. R. Patoary**. First-Principles Dynamical CPA Study of Itinerant Ferromagnetism and Intraatomic Exchange Coupling. Autumn Meeting in the Physical Society of Japan (Toyama University, Japan), September 21, 2011. Abstract Volume **66**, Issue 2, Part 3, page-412 (ISBN 1342-8349).
 23. ***M. A. R. Patoary** and Y. Kakehashi. A Momentum-Dependent Variational Approach to Strongly Correlated Electron System. Autumn Meeting in the Physical Society of Japan (Toyama University, Japan), September 22, 2011. Abstract Volume **66**, Issue 2, Part 2, page-240 (ISBN 1342-8349).
 24. ***M. A. R. Patoary** and Y. Kakehashi. Theory of Momentum-Dependent Variational Ansatz to Correlated Electron Systems. Workshop at Ryukyus University, Japan, November 12, 2011.
 25. ***M. A. R. Patoary** and Y. Kakehashi, Momentum-Dependent Local-Ansatz Variational Approach to Correlated Electrons in Solids, Spring Meeting in the Physical Society of Japan (Kwansei Gakuin University, Japan), March 27, 2012. Abstract Volume **67**, Issue 1, Part 2, page-373 (ISBN 1342-8349).
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 27. Y. Kakehashi, **M. A. R. Patoary**, Sumal Chandra, Nonlocal Excitations and 1/8 Singularity in Cuprates. Int. National Conf. of Magnetism (Bexco, Busan, Korea), July 09, 2012. Abstract page-124.
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 29. ***M. A. R. Patoary** and Y. Kakehashi, Momentum-Dependent Variational Approach from Weak to Strong Electron Correlations. The Ryukyu research meeting of solid-state physics, Japan, December 01, 2012.
 30. ***M. A. R. Patoary** and Y. Kakehashi, Theory of Momentum Dependent Local-Ansatz approach from Weak to Strong Electron Correlations, 118th Kyushu Branch Meeting, the Physical Society of Japan (University of the Ryukyus), December 08, 2012.

31. Y. Kakehashi, **M. A. R. Patoary** and Sumal Chandra, Nonlocal Excitations and $1/8$ Singularity in Cuprates, the Physical Society of Japan - Kyushu Branch Meeting (University of the Ryukyus), December 08, 2012.
32. ***M. A. R. Patoary** and Y. Kakehashi, Momentum Dependent Local-Ansatz Hybrid Wavefunction to Correlated Electron System, Spring Meeting in the Physical Society of Japan (Hiroshima University, Japan), March 26, 2013. Abstract Volume **68**, Issue 1, Part 2, page- 318 (ISBN 1342-8349).
33. Y. Kakehashi, Sumal Chandra and **M. A. R. Patoary**, Momentum-dependent local ansatz approach to correlated electrons, APS March Meeting 2014, March 5, Denver, Colorado, USA, Volume 59, Number 1.
34. ***M. A. R. Patoary** and Y. Kakehashi, Study of Momentum Dependent Local-Ansatz Variational Approach to Correlated Electron System, International Conference On Physics for Energy and Environment, 06–08 March 2014, BAEC, Dhaka, Bangladesh.
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36. A.K.F.Haque, **M.A.R. Patoary**, M.A.Uddin, A. K. Basak, and B. C. Saha. Electron Impact Inner-shell Ionization of Ions. Bulletin of the American Physical Society, Volume **60** (2015), Number 1. APS March Meeting March 2–6, 2015. San Antonio, Texas, USA.
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38. ***M Atiqur Rahman Patoary** and Yoshiro Kakehashi. Momentum Dependent Variational Approach with Hybrid Wavefunction to Correlated Electrons. International Conference on Advances in Physics 2015, 18-19 April, Rajshahi, Bangladesh.
39. M. A. Uddin, A. K. F Haque, **M. A. R. Patoary**, A. K. Basak, and B. C. Saha, Electron Impact Ionization of Ions. International Conference on Advances in Physics 2015, 18-19 April, Rajshahi, Bangladesh.
40. A. K. F. Haque, **M. Atiqur R. Patoary**, M. A. Uddin, A. K. Basak and B. C. Saha. Electron Impact ionization cross sections for H-to C- isoelectronic series. 46th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics. Volume 60, Number 7. Monday–Friday, June 8–12, 2015; Columbus, Ohio.
41. B. C. Saha, A. K. F. Haque, **M. Atiqur R. Patoary**, M. A. Uddin and A. K. Basak. Theoretical electron impact ionization cross sections for atomic and ionic targets for $E \leq 10$ keV. The XXIX International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC), Toledo, Spain on 22 –28 July 2015.
42. A. K. F. Haque, M. Alfaz Uddin, **M. A. R. Patoary**, A. K. Basak and B. C. Saha. Electron impact M -subshell ionization of atoms at relativistic energies. The XXIX International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC), Toledo, Spain on 22 –28 July 2015.
43. ***M. Atiqur R. Patoary**, A.K.F. Haque, M.A.Uddin, M. Ismail Hossain, A.K. Basak and M. Maaza. An Analytical Model for The Electron Impact K-Shell Ionization Cross

Sections of Atoms. International conference on Physics-2016, BAEC, Bangladesh, 10-12 March 2016.

44. ***M. Atiqur R. Patoary**, A.K.F. Haque, M.A.Uddin, M. Ismail Hossain, A.K. Basak. MVE Model for The Electron Impact K-Shell Ionization Cross Sections of Atoms. Young Scientists Congress^[SEP], Dhaka, Bangladesh, 27-28 October 2016.
45. M Elias Hosain, **M. Atiqur R. Patoary**, A.K.F. Haque, M.A.Uddin, M. Ismail Hossain, A.K. Basak. Elastic scattering of electrons and positrons by sodium atoms National conference on Physics-2017, BAEC, Bangladesh, 5-7 January 2017.
46. ***M Atiqur R Patoary**. Optical model study of the collisions of e^\pm by ytterbium (Yb) atom. **9th Hope Meeting with Nobel Laurites**, February 26 - March 2, 2017, Tokyo International Form Tokyo, Japan.
47. M Elias Hosain, **M. Atiqur R. Patoary**, A.K.F. Haque, M. Ismail Hossain, M. A. Uddin, A.K. Basak. Elastic scattering of electrons and positrons by alkali atoms. Conference on Material Science & Nano-Electrochemistry (CMSN-2017) University of Rajshahi, Bangladesh, 8-9 April 2017.
48. Bidhan Saha, A. K. Basak, M. A. Uddin, A. K. F. Haque, M. I. Hossain, M. M. Haque, **M. A. R. Patoary**, M. Maaza. The Elastic scattering of electrons and positrons by Pb atoms. 48th Annual Meeting of the APS Division of Atomic, Molecular & Optical Physics--June 5-9, 2017, Sacramento, CA; Bulletin of the American Physical Society: p140, Vol62, Number 8 (2017).
49. A. K. F. Haque, M. A. Uddin, A. K. Basak, B. C. Saha, M. Maaza, **M. A. R. Patoary**, M. M. Haque, and M. Ismail Hossain. Electron impact secondary electron emissions from atomic and molecular solid targets. The XXX International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC XXX), Cairns, Australia, on 26 July-1 August 2017.
50. B. C. Saha, A. K. Basak, M. A. Uddin, A. K. F. Haque, **M. A. R. Patoary**, M. M. Haque, M. Ismail Hossain, and M. Maaza. Electron impact L and M-subshell ionization cross sections for atoms ($14 \leq Z \leq 92$) including the relativistic effects. The XXX International Conference on Photonic, Electronic, and Atomic Collisions (ICPEAC XXX), Cairns, Australia, on 26 July-1 August 2017.
51. ***M. Atiqur, R. Patoary**, A.K.F. Haque, M.A.Uddin, and A.K. Basak. ^[SEP] The Electron Impact L-Shell Ionization Cross Sections of Atoms at Relativistic Energies. International Conference on Physics - 2018, 08-10 March 2018.
52. M. Shorifuddoza, **M. Atiqur R. Patoary**, A.K.F. Haque, and M.A.Uddin. The Elastic Interaction of Electron with Ytterbium Atoms Using a Complex Optical Potential. International Conference on Physics - 2018, 08-10 March 2018.
53. Nazifa T. Arony, A. K. F Haque, M. Alfaz Uddin, M. M. Haque, A. K. Basak, **M. A. R. Patoary**, M.M.Billah, M.Maaza, and Bidhan C. Saha. Elastic Scattering of Electron and Positron by Nitrogen Molecules. International Conference on Physics - 2018, 08-10 March 2018.
54. Prajna P. Bhattacharjee, A .K.F Haque, M. Alfaz Uddin, M. M. Haque, A. K. Basak, **M. A. R. Patoary**, M.M.Billah, M. Maaza, and Bidhan C. Saha. Relativistic Calculations for Electron and Positron Collisions with Mercury Atoms: ^[SEP] International Conference on Physics - 2018, 08-10 March 2018.

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56. A. K. Fazlul Haque, Sanjida Sultana, M. Alfaz Uddin, **M. Atiqur R. Patoary**, M. Sohag Hossain, M. M. Haque, M. Maaza. Proton-induced secondary electron emission for elemental solid targets ($Z_t=3-83$). Nanosmart Africa 2018 Conference, Capetown South Africa.19-22 November.
57. A.K.F. Haque, M. Alfaz Uddin, Sanjida Sultana, M.M. Haque, **M. Atiqur R. Patoary**, Nazifa T. Arony, and M. Maaza. Electron-induced secondary electron emission from elemental solid targets. Nanosmart Africa 2018 Conference, Capetown South Africa.19-22 November.
58. ***M. Atiqur R. Patoary**, M Shorifuddoza, A.K.F. Haque and M.A.Uddin. Ionization cross sections of M-shell and M-subshells by electron impact. National Conference on Physics -2019, 07-09 February, Dhaka.
59. M M Haque, A K F Haque, M Atiqur R Patoary, A K Basak, M Alfaz Uddin. ^{[[SEP]]}Electron and Positron Scattering from Argon Atoms. National Conference on Physics -2019, 07-09 February, Dhaka.
60. M. Shorifuddoza, M. Atiqur R. Patoary, A.K.F. Haque and M.A.Uddin. ^{[[SEP]]}Theoretical study of the critical minima and maximum spin-polarization in the elastic e^\pm scattering by the Ytterbium atom. National Conference on Physics -2019, 07-09 February, Dhaka.
61. A.K.F. Haque, M. M. Haque, D.H. Jakubassa-Amundsen, M. Atiqur R. Patoary, A.K. Basak, M. Maaza, B.C. Saha, M. Alfaz Uddin · e^\pm -Ar total ionization in the energy range $10\text{eV} \leq E_i \leq 20 \text{keV}$. ICPIG2019.
62. ***M A R Patoary**, M Shorifuddoza, A K F Haque and M A Uddin Ionization cross-sections of L-shell and L-subshells by electron impact^{[[SEP]]}. ICPEAC-2019
63. A. K. Fazlul Haque, M. Alfaz Uddin, Sanjida Sultana, M. Sohag Hoassain, M. Shoriduddoza, M. Atiqur R. Patoary and M. Maaza. Proton-induced secondary electron emission from elemental solid targets over the energy domain 1 keV-100MeV. ICPEAC-2019.
64. A.K.F. Haque, M. Shorifuddoza, M.A.R. Patoary and M.A. Uddin. Scattering of e^\pm from H_2O . ICPEAC-2019.
65. ***M. Atiqur R. Patoary**, M Mousumi, A. K. F. Haque, D. H. Jakubassa-Amundsen, M Shorifuddoza, Mahmudul H Khandker, M. M. Haque and M Alfaz Uddin. The elastic scattering of e^\pm with gold atoms using optical potential. International Conference on Physics-2020, 05-07 March, Dhaka, Bangladesh
66. Bidhan C. Saha, Arun K. Basak, M. Alfaz Uddin, A. K. Fazlul Haque, M. A. R. Patoary, M. M. Haque, M. Shorifuddoza, M. H. Khandker, R. Hassan; Collisions of electrons with Fe atoms at $E=1\text{eV} - 1 \text{MeV}$ A Relativistic investigation; 51st Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, June 1–5, 2020; Portland, Oregon, USA; Volume 65, Number 4.
67. Nowshin Anjum, M. Atiqur R. Patoary, M. Masum Billah, Mahmudul H Khandker, Hiroshi Watabe, A. K. F. Haque, and M Alfaz Uddin. Relativistic treatment for scattering of e^\pm by SO_2 molecule. International Conference on Physics-2022, 19-21 May, Atomic Energy Centre, Dhaka, Bangladesh.
68. Nira Akter, M. Atiqur R. Patoary, M. Nure Alam Abdullah, M. Masum Billah, Mahmudul H Khandker, M. Shorifuddoza, Hiroshi Watabe, A. K. F. Haque, and M

- Alfaz Uddin. Theoretical study e^{\pm} from the NH_3 molecule. International Conference on Physics-2022, 19-21 May, Atomic Energy Centre, Dhaka, Bangladesh.
69. B. C. Saha, Abdullah Hil Islam, M Atiqur R Patoary, M. M. Billah, M. H. Khandker, M M Haque, Hiroshi Watabe, A. K. F. Haque, A. K. Basak, M. A. Uddin, Collisions of Electrons and Positrons with Oxygen Iso-nuclear Series: A Relativistic Calculation, 62nd Sanibel Symposium, 12-17 February 2023, St. Augustine Beach, Florida, USA.
70. M Muktarul Haque, M Atiqur R Patoary*, A K F Haque, M A Uddin A study of the relativistic treatment for the scattering of electron (e^-) and positron (e^+) by H_2S molecule. International Conference on the Role of Science and Technology Towards 4IR, October 5 - 6, 2023, University of Rajshahi, Bangladesh.
71. Md. Samiul Islam, M. Atiqur R. Patoary , A. K. F Haque, The Study of The Scattering of Electron(e^-) and Positron(e^+) From Boron (B) Atom. International Conference on Physics – 2024, 9 – 11 May 2024, Atomic Energy Centre, Dhaka, Bangladesh.

*Presenter

Academic and Research achievement:

1. **Madar Bux Hall Gold Medal** for securing first class in the B.Sc (Honours) Examination of 2001.
2. **Engineer Akbar Hossain Scholarship** for outstanding academic performance in the B.Sc. (Honours) examination of 2001.
3. **University Prize** for securing First-class First position in the M.Sc. Examination of 2002.
4. **Monbukagakusho Scholarship** by Japanese government scholarship authority from October 2008 to September -2010 for Maters of Science program at University of the Rukyus.
5. **President's Honorary Award 2010** in recognition of my scholarly achievement and contributions to the university community. Graduate school of Engineering and Science, University of the Ryukyus, Japan.
6. **Monbukagakusho Scholarship** by Japanese government scholarship authority from October 2010 to September 2013 for PhD program at University of the Rukyus, Japan.
7. **Research Assistantship** as a part-time job during PhD research at Kakehashi laboratory, faculty of science, University of the Ryukyus, Japan from October 2010 to September 2013.
8. **Director's Honorary Award 2013** in recognition of my scholarly achievement. Graduate school of Engineering and Science, University of the Ryukyus, Japan.
9. **Best Poster Award** by Bangladesh Physical Society at International Conference On Physics for Energy and Environment, 06 – 08 March 2014.
10. **Razzaq-Shamsun Physics Research Prize 2008** for the best published physics research in that year. The University of Dhaka conducts the awarding process.
11. **Best Poster Award** by Bangladesh Physical Society at International Conference on Physics, 10 – 12 March 2016.
12. **Best Poster Award** by Bangladesh Physical Society at National Conference on Physics, 5–7 January 2017.
13. The **TWAS 2017 Prize for Young Scientists** (Physical Science). Bangladesh Academy of Science (BAS) and the World Academy of Science (TWAS), Trieste, Italy conduct the awarding process.
14. **Best Poster Award** by Bangladesh Physical Society at International Conference on Physics – 2024, 9 – 11 May 2024.

Research Grants:

1	Title of the Project	Investigation of elastic and ionizing interaction of electron and positron with atom and molecules
	Funding organization	University of Rajshahi
	Project No	32/5/52/UGC/Science-9/2015-16; 23-01-2016
	Year	2015-16
	Role	Principal Investigator
2	Title of the Project	An Analytical Model for The Electron Impact L-, M-Shell Ionization Cross Sections of Atoms
	Funding organization	University of Rajshahi
	Project No	1099/-5/52/R.U./Science-02/16-17/32; 14-11-2016
	Year	2016-17
	Role	Principal Investigator
3	Title of the Project	Calculation of various cross-sections for elastically scattered electron and positron by lighter atoms
	Funding organization	University Grand Commission (UGC)
	Project No	6(74)/UGC/RSP/ST/Physical (10)/2016/4454; 15-05-2017
	Year	2016-17
	Role	Principal Investigator
4	Title of the Project	Theoretical study of elastic scattering of electron and positron with atoms using a complex optical potential
	Funding organization	Ministry of Science and Technology (MOST)
	Project No	39.00.0000. 09.06.79.2017/2/451/37 Phy's;06-11-2017
	Year	2017-18
	Role	Principal Investigator
5	Title of the Project	Elastic Scattering of electron and positron with atom and molecules: the Dirac partial wave analysis
	Funding organization	Ministry of Science and Technology (MOST)
	Project No	39.00.0000. 09.02.90.18-19/02/520/32 Phy's;14-01-2019
	Year	2018-19
	Role	Principal Investigator
6	Title of the Project	Relativistic treatment of elastic and ionizing interaction of electron and positron with atom and molecules
	Funding organization	University of Rajshahi
	Project No	1359/5/52/R.U./Science-03/18-19/32; 18-12-2018
	Year	2018-19
	Role	Assistant Principal Investigator
7	Title of the Project	Study of elastic scattering of e^{\pm} by atom and molecule
	Funding organization	University Grand Commission (UGC)
	Project No	37.01.0000.073.07.039.21.196; 13-03-2022
	Year	2020-21
	Role	Principal Investigator
8	Title of the Project	Investigation of elastic scattering of e^{\pm} (electron/positron) with atoms and molecules.
	Funding organization	University of Rajshahi
	Project No	244/5/52/R.U./Science-08/2021-2022; Date17-02-2022

Year	2021-22
Role	Principal Investigator

M.Sc Thesis Supervision:

No	Name	Roll	Thesis Title	Session
01	Md. Elias Hossain	11084304	Elastic Scattering of Electrons and Positrons by Alkali Atoms	2014-15
02	Prajna Paramita Bhattacharjee	12204354	Theoretical Study of Elastic and Inelastic Electrons and Positrons by Ar and Hg Atoms	2015-16
03	Nazifa Tasnim Arony	13234384	Interaction of e^{\pm} with Elemental Solids and N_2 Molecule	2016-17
04	Md. Shorifuddoza	13104395	Theoretical Study of Scattering and Ionization Interaction of Electrons and Positrons with Atoms	2016-17
05	Sanzida Afroze	14244336	Scattering Electrons and Positrons from Indium	2017-18
06	M Moushumi	14224331	Computation of observables for scattering of e^{\pm} from gold atom	2017-18
07	Nowshin Anjum	1512022110	Relativistic treatment for scattering of e^{\pm} by SO_2 molecule	2018-19
08	Abdullah Hil Islam	1611122186	Theoretical investigation of the scattering of e^{\pm} by oxygen isonuclear series	2019-20
09	Md. Muktarul Haque	1710822108	Relativistic treatment for scattering of electrons and positrons by H_2S Molecule	2020-21
10	Md. Shahin Alom	1810522118	Relativistic study on the scattering of e^{\pm} from phosphorus isonuclear series	2021-22
11	Hasan Ali	1810822123	Relativistic study on the scattering of e^{\pm} from Sulphur isonuclear series	2021-22
12	Md. Samiul Islam	1910222127	Relativistic treatment for scattering of e^{\pm} from SiO molecule	2022-23

Professional Memberships:

- 2004-to date Life member of Bangladesh Physical Society, Bangladesh.
- 2009-2013 Member of Physical society of Japan, Japan.
- 2016-to date Member of American Physical society , USA.
- 2017-to date JSPS HOPE Fellow.
- 2018- to date Founding member of National Young Academy of Bangladesh (NYAB).

✚ **Language Efficiency:**

- Bengali (Mother Language).
- English (Speaking, Reading, Writing and listening).

✚ **Computer Skill:**

- Programming with FORTRAN 77 and 90.

✚ **Reference:**

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