Alamgir Kabir CURRICULUM VITAE

Professor Department of Physics University of Dhaka Dhaka 1000 E-mail: <u>alamgir.kabir@du.ac.bd</u> Phone: +88 01711978225 Date of Birth: June 04, 1978 (Sherpur, Bangladesh)



EDUCATION:

Ph.D. in Physics		:	Department of Physics, University of Central Florida, Fl 32816, U.S.A.
	Graduation Date	:	May 2015
	Dissertation Title	:	Density-Functional Theory+Dynamical Mean-Field Theory Study of the Magnetic Properties of Transition -Metal Nanostructures
	Thesis Adviser	:	Talat S. Rahman
M.S. in Physics		:	Department of Physics, University of Central Florida, U.S.A.
	Graduation date	:	August, 2010
	CGPA	:	3.85
M.S. in Physics		:	Department of Physics, University of Dhaka, Dhaka, Bangladesh
	Graduation date	:	June 2005
	Thesis title	:	A Study of the Electronic Structure of CuNi Alloys Using LMTO, LSDA and Recursion Method
	Thesis Adviser	:	Prof. Mesbah Uddin Ahammad
	Result	:	1 st Class 2 nd Position
B.Sc. in Physics		:	Department of Physics, University of Dhaka, Dhaka, Bangladesh
	Graduation date	:	June 2002
	Result	:	1 st Class 2 nd position
H. S. C (science group)		:	Govt. Ashek Mahmud Collage, Jamalpur. Dhaka Board, Bangladesh
	Year of passing	:	1996
	Result:	:	1 st division

S. S. C (science group) : Ahammad Nagar High School, Sherpur. Dhaka Board, Bangladesh

Year of Passing : 1994

Result : 1st division

ACADEMIC POSITIONS:

- Professor (September 2021 to present): Department of Physics, University of Dhaka, Bangladesh
- Associate Professor (May 2016 to September 2021): Department of Physics, University of Dhaka, Bangladesh
- Assistant Professor (May 2015 to May 2016): Department of Physics, University of Dhaka, Bangladesh
- Lecturer(November 2006 to May 2015): Department of Physics, University of Dhaka, Bangladesh (Study leave, from August 2008 to April 2015)
- Graduate Teaching Assistant (August 2008 to August 2009): University of Central Florida, USA
- Lecturer (April 2004 to November 2006): Department of Arts and Science, Ahsanullah University of Science and Technology, Dhaka Bangladesh.

PROFESSIONAL TRAINING:

Training name: Preparing for Future Faculty, Fall 2011
Training duration: 3 months
Training type: Instruction and demonstration
Training porous: Learn how to teach effectively in a class
Diploma awarded: yes
Place of training: Faculty Center, University of Central Florida, USA

RESEARCH INTEREST:

We use computer simulation to find new materials for technological and biomedical applications. My main research interest is to study the electronic, optical, mechanical, and magnetic properties of nanoparticles, surfaces, interfaces, and thin film systems. We use *ab initio* Density Functional Theory (DFT) and Molecular Dynamics (MD) as tools for our study. Our research work is generally concerned with the concept of multi-functionality on reduced dimensions. Multifunctional nanosystems have important chemical, physical, biomedical, and technological applications. Magnetic nanoparticles have promising applications in quantum computing, magnetic recording devices, and medical applications such as hyperthermia techniques for cancer treatment and enhancing the contrast of MRI images. Our research group also studies the photocatalytic properties of various surfaces and nanoparticles. 2D materials such as graphene, MoS2, and WS2 have very novel properties that can be used as catalysts

for water-splitting reactions. We study the water-splitting reaction mechanisms on graphene and MoS2

surfaces. We are also investigating the optical properties of semiconducting nanoparticles such as CuO and ZnO in both pure and doped forms. Our group studies the electronic and optical properties of various lead-free perovskites, double perovskites, and doped perovskites for their optoelectronic and solar cell applications. We collaborate with many experimental research groups both domestically and internationally, such as in India, Turkey, and the USA.

REFEREED JOURNAL PUBLICATIONS:

- Rifat Sarker Apu , Nazmul Hasan, M. Hussayeen Khan Anik, Mohammed Mehedi Hasan, M. Arifuzzaman, M. Harunur Rashid, Alamgir Kabir, "Pressure-Induced Physical and Optoelectronic Properties of Noble Cs2HfInBr6 for Enhanced Solar Energy Harvesting" _International Journal of Energy Research, Volume 2025, Article ID 9913604, 22 pages https://doi.org/10.1155/er/9913604
- Julaiba T. Mazumder, Mohammed M. Hasan, Fahim Parvez, Tushar Shivam, Dobbidi Pamu, Alamgir Kabir, Mainul Hossain, Ravindra K. Jha, "Unlocking the sensing and scavenging potential of Sc2CO2 and Sc2CO2/TMD heterostructures for phosgene detection", *Phys. Chem. Chem. Phys*

DOI: 10.1039/d5cp00601e

- Rifat Sarker Apu, Nazmul Hasan, Rubaiyet I. Haque, Alamgir Kabir, Md Harunur Rashid, "Ferromagnetic double Sr2PrSnO6 perovskite: DFT analysis of physical, optoelectronic, and transport properties for advanced opto-spintronics", *AIP Advances* 15, 035043 (2025) https://doi.org/10.1063/5.0251810
- Mohammed Mehedi Hasan, Nazmul Hasan, Alamgir Kabir, "DFT studies of the role of anion variation in physical properties of Cs2NaTlBr6-xClx (x=0, 1, 2, 3, 4, 5, and 6) mixed halide double perovskites for optoelectronics" *R. Soc. Open Sci.* 12: 241680. https://doi.org/10.1098/rsos.241680
- Nazmul Hasan, M. Hussayeen Khan Anik, Mohammed Mehedi Hasan, Sharnali Islam, Alamgir Kabir, "Comprehensive numerical analysis of doping controlled efficiencyin lead-free CsSn_{1-x}Ge_xI₃ perovskite solar cell" Applied Physics A (2025) 131:34, <u>https://doi.org/10.1007/s00339-024-08125-y</u>
- Farhan Noor, Alamgir kabir, and MD. Tareq Mahmud, "A First-principles Investigation of the Structural, Optoelectronic, Elastic and Thermal properties of the p-type Half-metallic Ferromagnetic Perovskites BaFeX₃(X = Cl, Br, I)" *Phys. Scr.* 99 125962, DOI 10.1088/1402-4896/ad8f6f
- Arafat Rahman, Alamgir Kabir& Tareq Mahmud, "Computational insights into transition metalbased BaCoX₃ (X = Cl, Br, I) halide perovskites for spintronics, photovoltaics, and renewable energy devices" *Sci Rep* 14, 26457 (2024). https://doi.org/10.1038/s41598-024-76812-0
- 8. M. Atikur Rahman, Sayed Syful Islam, Md Ali Rayhan, **Alamgir Kabir**, Mohammad A. Alim, Jamal Uddin, Munirah D. Albaqami, Saikh Mohammad, Rajesh Haldhar, M. Khalid Hossain,

"Comparative analysis of KXH3(X= Mg, be) hydride cubic perovskites for hydrogen storage properties: A computational approach", International Journal of Hydrogen Energy 80 (2024) 725–732, <u>https://doi.org/10.1016/j.ijhydene.2024.07.064</u>

- Mohammed Mehedi Hasan, Alamgir kabir, "Tuning the Physical Properties of Lead-Free Halide Double Perovskite Cs₂MInCl₆ (M= Na, K) Via Cu Doping for Optoelectronic Applications: A DFT Investigation", J. Phy. Chem. C 2024, 128, 407-420, <u>https://doi.org/10.1021/acs.jpcc.3c05891</u>
- Nazmul Hasan, Mohammed Mehedi Hasan, Alamgir kabir, and Md Harunur Rashid, "Theoretical study of the structural, electronic, mechanical, and optical oftransition metal (mn, co, and ni) doped FrGel3 perovskites" Results in Materials 20 (2023) 100457, <u>https://doi.org/10.1016/j.rinma.2023.100457</u>
- N. Hasan, S.S. Nishat, S. Sadman, M.R. Shaown, M.A. Hoque, M. Arifuzzaman, A. Kabir "Magnetic, optoelectronic, and rietveld refined structural properties of Al3+ substituted nanocrystalline Ni-Cu spinel ferrites: An experimental and DFT based study", Journal of Magnetism and Magnetic Materials 573 (2023) 170675, <u>https://doi.org/10.1016/j.jmmm.2023.170675</u>
- Fahim Bin Selim, Alamgir kabir, and Sadiq Shahriyar Nishat, "Effect of transition metal doping on CsGeBr3 perovskite: First-principle study", AIP Advances 12, (2022) 075122, <u>https://doi.org/10.1063/5.0091354</u>
- ShahranAhmed, TariqueHasan, A.K.M. Sarwar HossainFaysal, Sadiq ShahriyarNishat, M.N.I.Khan, AlamgirKabir, ImtiazAhmed, "A DFT+U approach to doped SrTiO₃ for solar harvesting applications", Computational Materials Science 214 (2022), 111743, <u>https://doi.org/10.1016/j.commatsci.2022.111743</u>
- 14. Mohammad Mehedi Hasan, **Alamgir Kabir**, Md. Kamruzzaman, "The structural, elastic, electronic, magnetic and optical properties of SrNiO3 perovskite: A DFT and DFT+U study", Results in Physics 41 (2022) 105920, <u>https://doi.org/10.1016/j.rinp.2022.105920</u>
- Md Mainul Abrar, *Alamgir Kabir*, Sadiq Shahriyar Nishat, "A DFT+U study on the structural, electronic, magnetic, and optical properties of Fe and Co co-doped CuO", Materials Today Communications 32 (2022) 103923, <u>https://doi.org/101016/j.mtcomm.2022.103923</u>
- Sikder Ashikuzzaman Ayon, Sajjad Hasan, Md Muktadir Billah, Sadiq Shahriyar Nishat, *Alamgir Kabir*, "Improved luminescence and photocatalytic properties of Sm3+-doped ZnO nanoparticles via modified sol-gel route: A unified experimental and DFT+U approach", Journal of Rare Earths, 2022, ISSN 1002-0721, <u>https://doi.org/10.1016/j.jre.2022.03.004</u>.

- Nazmul Hasan, Md Arifuzzaman, and *Alamgir Kabir*, "Structural, elastic and optoelectronic properties of inorganic cubic FrBX3 (B=Ge, Sn; X= Cl, Br, I) perovskite: the density functional theory approach", RSC Adv., 2022, 12, 7961; <u>https://doi.org/10.1039/D2RA00546H</u>
- Jannatul Fardush Tanha, S. F. U. Farhad, U. Honey, N. I. Tanvir, Tarique Hasan, Sadiq Shahriyar Nishat, *Alamgir Kabir*, Shahran Ahmed, Mahmuda Hakim, M. N. I. Khan, Mohammad Moniruzzaman, and Imtiaz Ahmed, "A DFT+U look into experimentally synthesized monoclinic scheelite BiVO4", J. Appl. Phys. 130, 235107 (2021); doi: 10.1063/5.0074148
- Md. Khorshed Alam*, Md. Alauddin, *Alamgir Kabir*, and Hedong Zhang, "Effect of nitrogen incorporation and ultraviolet irradiation on interactions of perfluoropolyether with carbon surfaces using quantum chemical study", Journal of the Bangladesh Chemical Society 2020, 33(1), 18–25
- 20. Khan MD Golam Rabbani, Someshwar Das, S. K. Panda, Alamgir Kabir, Muhammad Abul Kalam Mallik, "Physical and dynamical characteristics of thunderstorms over Bangladesh based on radar, satellite, upper-air observations, and WRF model simulations," Pure and Applied Geophysics 178, 3747–3767 (2021);https://doi.org/10.1007/s00024-021-02847-3
- 21. Md. Ashraful Islam, Javed Meandad, Saurav Dey Shuvo, and Alamgir Kabir, "Modeling of Lightning Events using WRF-derived Microphysical Parameters", Dhaka University Journal of Earth and Environmental Sciences, Vol. 8 (2), 2019
- 22. Sadiq Shahriyar Nishat, Md. Jayed Hossain, Faiyaz Elahi Mullick, Alamgir Kabir, Shaestagir Chowdhury, Sharnali Islam, and Mainul Hossain, "Performance Analysis of Perovskite Solar Cells Using DFT-Extracted Parameters of Metal-Doped TiO₂ Electron Transport Layer" J. Phys. Chem. C 2021,125,13158-13166, https://doi.org/10.1021/acs.jpcc.1c02302
- Fariha Ahmed and Alamgir Kabir, "Electronic Properties and Scanning Tunneling Microscopy Simulation of MoS₂ Nanosheets by Using Density Functional Theory" Dhaka Univ. J. Sci. 69(1): 53-57, 2021 (January)
- 24. Shahran Ahmed, Sadiq Shahriyar Nishat, Alamgir Kabir, A. K. M. Sarwar Hossain Faysal, Tariq Hasan, Shovon Chakraborty, Imtiaz Ahmed, "Structural, elastic, vibrational, electronic and optical properties of SmFeO₃ using density functional theory" Physica B. Condensed Matter 615, (2021) 413061, <u>https://doi.org/10.1016/j.physb.2021.413061</u>
- Muhammad Rakibul Islam, Md. Saiduzzaman, Sadiq Shahriyar Nishat, Alamgir Kabir, S. F. U. Farhad, "Synthesis, characterization and visible light-responsive photocatalysis properties of Ce doped CuO nanoparticles: A combined experimental and DFT+U study" Colloids and Surfaces A: Physicochemical and Engineering Aspects 617 (2021) 126386, https://doi.org/10.1016/j.colsurfa.2021.126386

- 26. Sikder Ashikuzzaman Ayon, Md Muktadir Billah, Sadiq Shahriyar Nishat, Alamgir Kabir, "Enhanced photocatalytic activity of Ho3+ doped ZnO NPs synthesized by modified sol-gel method: An experimental and theoretical investigation" Journal of Alloys and Compounds 856 (2020) 158217, https://doi.org/10.1016/j.jallcom.2020.158217
- Alamgir Kabir, Esteaque Ahmed, "First principles study of magnetization and magnetic anisotropy energy of small Co-Pt clusters" Results in Physics, 19(2020) 103394, (<u>https://doi.org/10.1016/j.rinp.2020.103394</u>)
- Sadiq Shahriyar Nishat, Md Tohidul Islam, Saquib Ahmed, Alamgir Kabir "Ab initio study of oxygen evolution reaction and hydrogen evolution reaction via water splitting on pure and nitrogen-doped graphene surface" Materials Today Communications 25 (2020) 101602, (<u>https://doi.org/10.1016/j.mtcomm.2020.101602</u>)
- Muhammad R. Islam, Jaed Ebna Obaid, Md. Saiduzzaman, Sadiq Shahriyar Nishat, T. Debnath, Alamgir Kabir, "Effect of Al doping on the structural and optical properties of CuO nanoparticles prepared by solution combustion method: Experiment and DFT investigation", Journal of Physics and Chemistry of Solids 147 (2020) 109646 (https://doi.org/10.1016/j.jpcs.2020.109646)
- Alamgir Kabir, Sadiq Shahriar Nishat, Sumaya Rahman, "The Density Functional Theory (DFT) and DFT+U Study of the Effect of the on-site Coulomb Repulsion Parameter U on the Structural and Magnetic Properties of CeO2 nanoparticles", Bangladesh J. Phys, Vol. 27, Issue 1, pp. 43–58, June 2020 https://doi.org/10.3329/bjphy.v27i1.49725
- 31. Tohidul Islam, Rafsun Jani, Syed Muhammad Al Amin, Kazi Md Shorowordi, Sadiq Shahriyar Nishat, Alamgir Kabir, M.F.N. Taufique, Shaestagir Chowdhury, Sankha Banerjee, Saquib Ahmed, "Simulation studies to quantify the impacts of point defects: An investigation of Cs₂AgBiBr₆ perovskite solar devices utilizing ZnO and Cu₂O as the charge transport layers", Computational Materials Science 184 (2020) 109865 https://doi.org/10.1016/j.commatsci.2020.109865)
- Alamgir Kabir, Jun Hu, Volodymyr Turkowski, Ruquian Wu, Robert Camley and Talat S. Rahman, "Effect of structure on the magnetic anisotropy of L10 FePt nanoparticles", Phys. Rev. B. 92 054424 (2015), DOI: 10.1103/PhysRevB.92.054424
- 33. Alamgir Kabir, Volodymyr Turkowski and Talat S. Rahman, "A DFT+Nonhomogeneous DMFT approach for Finite Systems", J. Phys.: Condens. Matter 27 (2015) 125601, stacks.iop.org/JPCM/27/125601/mmedia

- Volodymyr Turkowsk, Alamgir Kabir, Neha Nayyar and Talat S. Rahman, "Dynamical Mean Field Theory for Molecules and Nanostructures", J. Chem. Phys. 136, 114108 (2012), <u>http://dx.doi.org/10.1063/1.3692613</u>
- 35. Volodymyr Turkowsk, Alamgir Kabir, Neha Nayyar and Talat S. Rahman, "A DFT + DMFT approach for nanosystems" J. Phys.: Condens. Matter 22 462202(2010), stacks.iop.org/JPhysCM/22/462202
- 36. Alamgir Kabir, Zereen Saba and Javed Meandad, "The Assimilation of Satellite Radiance Data for Hailstorm Prediction over Bangladesh with Three-Dimensional Variational (3Dvar) WRF Model" Bangladesh Journal of Scientific Research, Bangladesh J. Sci. Res. 31-33(2): 2020 (December)
- Pappu Paul, Ashik Imran, Md. Jafrul Islam, Alamgir Kabir, Sahad Jaman, and Ishtiaque M. Syed, "Study of Pre-Monsoon Thunderstorms and Associated Thermodynamic Features Over Bangladesh Using WRF-ARW Model", Dhaka Univ. J. Sci. 67(2): 151-156, 2019 (July)
- Akhlak-Ul Mahmood, Alamgir Kabir, "Calculation of Curie Temperature of Magnetic Nanoparticles: Iron nanoparticles as an example" Bangladesh Journal of Physics, 22, 73-82, 2017
- Alamgir Kabir, N. Shams, Mesbahuddin Ahamed and Ain-ul-Huda, "The Magnetic Moment, Fermi Energy and Binding Energy of Binary Random alloys of Cu and Ni", Dhaka Univ. J. Sci. 55(1): 129-132 2007 (January)

INVITED TALKS

- 1. **Invited Talk**, Density Functional Theory, and Its Applications in Nanosystems, Fifth Conference of Bangladesh Crystallography Association (BCA), January 25-26, 2019, Dhaka, Bangladesh.
- 2. Alamgir Kabir, The Impact of Density Functional Theory on Lead-Free Perovskite Solar Cells Research, Sultan Ahmed Memorial Conference: Recent Advances in Physics, Dhaka, 3-4 May, 2024
- 3. Alamgir Kabir "Density Functional Theory to Study Inorganic Lead-free Perovskite and Double Perovskite Materials for Photovoltaic Applications", International Conference on Physics – 2024, Dhaka, 09 - 11 May 2024.

CONTRIBUTED TALKS AT SCIENTIFIC MEETINGS:

4. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman, *"Spectral and magnetic properties of hematite Fe2O3 (001) surface: results from DFT+DMFT"*, American Physical Society March meeting 2015, San Antanio, Texas, March 2-5

- 5. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman, *"magnetic moments and magnetic anisotropic energy of L1₀FePt nanoparticles"*, American Physical Society March meeting 2014, Denver, CO, March 3-7
- 6. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman, "Magnetic properties of Fe and Fe-Pt nanoparticles: application of nano-DFT+DMFT", American Physical Society March meeting 2013, Baltimore, MD, March 18-22
- 7. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman, *"Magnetic Properties of Fe clusters: A DFT+U vs nano DFT+DMFT analysis"*, AVS 59th International Symposium and Exhibition 2012, Tampa, Fl, October 28- November 2
- 8. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman *"Magnetic properties of Fe nanoparticles: application of the DFTinhomogeneous-DMFT approach"*, American Physical Society March meeting 2012, Boston, MA, February 27March 2
- 9. <u>Alamgir Kabir</u>, Neha Nayyar, Volodymyr Turkowski, and Talat S Rahman, *"Electron-electron correlations and magnetic properties of small FePt clusters"* APS March meeting 2011, Dallas, Texas, March 21 25
- 10. <u>Alamgir Kabir</u>, Neha Nayyar, Volodymyr Turkowski, and Talat S Rahman, "*Dynamical electron-electron correlation effects and magnetism of FePt clusters*", Third Annual nano-Science Technology Symposium 2010, UCF, September 24
- 11. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman, *"Magnetic properties of small iron clusters: Nanoscale Dynamical Mean-Field Theory analysis"*, APS March Meeting, Portland, Oregon, March 15-19, 2010
- 12. <u>Alamgir Kabir</u>, Volodymyr Turkowski and Talat S. Rahman, "*Magnetic anisotropic energy of L1₀FePt nanoparticles*", Graduate Research Forum, University of Central Florida, April 1, 2014,
- 13. <u>Alamgir Kabir</u>, Volodymyr Turkowski and Talat S. Rahman, "*Magnetic properties of Fe* and Fe-Pt nanoparticles: Application of the DFT-Inhomogeneous-DMFT approach", Graduate Research Forum, University of Central Florida, April 2, 2013,
- 14. <u>Alamgir Kabir</u>, Volodymyr Turkowski and Talat S. Rahman, "Magnetic properties of Fe and Fe-Pt nanoparticles: Application of the DFT-Inhomogeneous-DMFT approach", Florida chapter of the American Vacuum Society, UCF, March 4-5, 2013
- 15. <u>Alamgir Kabir</u>, Volodymyr Turkowski and Talat S. Rahman, "*Magnetic Properties of Transition metal nanoparticles: A DFTInhomogeneous-DMFT analysis*", ES12: The 24th Annual Workshop on Recent Developments in Electronic Structure Theory, Wake Forest University, Winston-Salem, NC, June 58, 2012
- 16. <u>Alamgir Kabir</u>, Neha Nayyar, Volodymyr Turkowski, and Talat S Rahman, "*Magnetic Properties of Fe27 clusters: A DFT+ U vs DMFT analysis*", Florida Society for Materials Simulation, UCF, August 1-2, 2011
- 17. Alamgir Kabir, Neha Nayyar, Volodymyr Turkowski, and Talat S Rahman, "*Electron-electron correlations and magnetic properties of small FePt clusters*", Student Research Week, UCF, March 28- April 1, 2011,

- 18. <u>Alamgir Kabir</u>, Neha Nayyar, Volodymyr Turkowski, and Talat S Rahman, "*Magnetic Properties of Small Fe-Pt Clusters, A DFT+U vs DMFT Study*", Florida chapter of the American Vacuum Society, UCF, March 6-8, 2011
- 19. <u>Alamgir Kabir</u>, Neha Nayyar, Volodymyr Turkowski, and Talat S Rahman, "*Electron-electron correlations and magnetic properties of small FePt clusters*" Florida Society for Materials Simulation, UCF, August 2-3, 2010
- 20. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman, "Jahn-Teller instability and magnetic properties of Iron clusters: DFET+U vs DMFT solution", 13th International Conference on Vibrations at Surfaces, UCF March 1013, 2010
- 21. <u>Alamgir Kabir</u>, Volodymyr Turkowski, and Talat S Rahman, "Dynamical Mean-Field Theory study of electron correlation effects in small iron clusters", Second Annual nano-Science Technology Symposium, UCF, September 2009.
- Alamgir Kabir, Jun Hu, Volodymyr Turkowski, Ruqian Wu, Robert Camley, and Talat S. Rahman, "Density Functional Theory and torque Method Study of Magnetic anisotropy of FePt nanoparticles" 2nd international Bose conference-2015, University of Dhaka, Bangladesh, December 3-4, 2015
- 23. AkhlacUl Mahmood, <u>Alamgir Kabir</u>, "Calculation of Curie Temperature of Magnetic Nanoparticles", Bangladesh Physical Society Conference, January 2017, Dhaka, Bangladesh.
- Tamzeed Bani Amin, <u>Alamgir Kabir</u>, "The study of Magnetic properties of Fe2O3 Surface by using DFT+U approach." Bangladesh Physical Society Conference, March 8-10, 2018, Dhaka, Bangladesh.
- 25. Md. Saiduzzaman, Jaed Ebna Obaid, <u>Alamgir Kabir</u>, Muhammad R. Islam," Synthesis and characterization of Copper Oxide nanoparticle by modified sol gel technics", Bangladesh Physical Society Conference, March 8-10, 2018, Dhaka, Bangladesh.
- Piya Chowdhury and <u>Alamgir Kabir</u>, "Study of magnetic properties of NiPt clusters using Density Functional Theory", Bangladesh Physical Society Conference, March 8-10, 2018, Dhaka, Bangladesh.
- 27. Sumaya Rahman, <u>Alamgir Kabir</u>, "Magnetic properties of CeO2 nanoparticles: A DFT and DFT+U approach", Bangladesh Physical Society Conference, February 7-9, 2019, Dhaka, Bangladesh.
- Sadia Zabin, <u>Alamgir Kabir</u>, "The Study of Magnetic Anisotropy energy of L10 FePd Nanoparticles", Bangladesh Physical Society Conference, February 7-9, 2019, Dhaka, Bangladesh.
- Jaed Ebna Obaid, Md. Saiduzzaman, <u>Alamgir Kabir</u>, Muhammad R. Islam, "Structural, electrical and optical properties of CuO and Al-doped CuO nanoparticle synthesized by solution combustion technique", Bangladesh Physical Society Conference, February 7-9, 2019, Dhaka, Bangladesh.
- **30.** Khan MD Golam Rabbani, Dr. Muhammad Abul Kalam Mallik, Alamgir Kabir, "Performance of WRF-ARW Model for Predicting Thunderstorm Over Bangladesh And Its Verification using Model Evaluation Tools (MET)." International Conference on

Contemporary Research and Applications of Meteorology, Bangladesh Meteorological Department, Agargaon, Dhaka, Bangladesh.07 December 2019

- 31. Fariha Ahmed Ratul, Alamgir Kabir, "Electronic properties of MoS₂ nanoparticles by using Density Functional Theory (DFT)" International Conference on Physics 2020, 05-07 March, Dhaka, 2020
- **32.** Sadiq Shahriyar Nishat, **Alamgir Kabir**, "Study of Hydrogen production via water splitting on Nitrogen-doped graphene surface by using Density Functional Theory (DFT)" International Conference on Physics 2020, 05-07 March, Dhaka, 2020
- 33. Khan MD Golam Rabbani, Alamgir Kabir, Someshwar Das, "Analysis of severe storm activity over Bangladesh and Nepal on 31 March 2019 through WRF-ARW Model and Its Verification using Model Evaluation Tools (MET)." International Conference on Physics - 2020, 05-07 March, Dhaka, 2020
- 34. Khan Md Golam Rabbani, Alamgir Kabir, Dr. Muhammad Abul Kalam Mallik "Study on Physical and Dynamical Properties of Pre-monsoon Thunderstorm Over Bangladesh Using WRF-ARW Model" International Conference on Earth and Environmental Sciences and Technology for Sustainable Development – 2020, 25-30 January 2020, Dhaka, 2020
- 35. Zereen Saba, Alamgir Kabir, Muhammad Abul Kalam Mallik, Subrat Kumar Panda, Someshwar Das and Javed Meandad, "Impacts of Radiance Data Assimilation on the Simulation of Extreme Hailstorm Events over Bangladesh Using WRF Model" International Conference on Meteorology and Climate Science, December 11-12, 2020 Dhaka, Bangladesh
- 36. Md. Asraful Islam, Alamgir Kabir, Md. Shadekul Alam, Subrat Kumar Panda, Someshwar Das, Javed Meandad and Khan Md. Golam Rabbani, "Modeling of Lightning events using Weather Research and Forecasting (WRF) Model derived Microphysical parameters", International Conference on Meteorology and Climate Science, December 11-12, 2020 Dhaka, Bangladesh

AWARDS AND SSCHOLARSHIPS:

- Graduate research excellence fellow for the year 2013-2015 at UCF
- Grand Prize in poster presentation in Computational and Experimental Materials Science category, Florida Chapter of the American Vacuum Society, and Florida Society for Microscopy, 2013
- 2nd best poster award in simulation and modeling category in Nano-Florida conference 2009
- > Dhaka University Scholarship for the outstanding result in B.Sc. (Hons), in 2003
- Bangladesh Government Junior School Scholarship in 8th Grade, in 1988

> Bangladesh Government Primary School Scholarship in 5th Grade, in 1985

Professional Societies: Life Member, Bangladesh physical Society.

PROFESSIONAL DEVELOPMENT:

Fall 2012 Summer School on Band structure meets Many Body Theory Vienna University of Technology, Austria

<u>KEY SKILLS:</u>		
Programming	:	C++, Fortran 90
Scientific Package	:	VASP, Quantum Espresso, LAMMPS, GPAW, Fireball, YAMBO, Xcrysden, VIESTA, Origin, Maple.
Operating Systems	:	Windows, Linux Redhat, Mac
Computational techniques	:	Ab initio density-functional-theory based methods, Classical and Quantum-mechanical Molecular Dynamics, Dynamical mean field theory tight-binding electronic structure methods.

REFERENCES:

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2. Prof. Volodymyr Turkowski

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