



Professor Dr. Abdul Mannan
BAS Associate Fellow 2024

Dr. Abdul Mannan was born on 1 January 1988 in Munshiganj, Bangladesh. He has a permanent position (Professor) at the Department of Physics, Jahangirnagar University. Recently, he has completed Istituto Nazionale di Fisica Nucleare (INFN) Postdoctoral Research Fellowship in Experimental Physics at INFN-Laboratori Nazionali di Frascati, Italy. He has developed a fast simulation code in a plasma wakefield accelerator that is contributing to the EuPRAXIA@SPARC LAB (EuPRAXIA is the first European and worldwide project that develops a dedicated particle accelerator research infrastructure based on novel plasma acceleration concepts and laser technology). He completed the prestigious Alexander von Humboldt (AvH) Postdoctoral Research Fellowship at Martin Luther University Halle-Wittenberg (Germany). He was also awarded the Alexander von Humboldt Return Fellowship from the same foundation because of his successful completion of the AvH postdoctoral research fellowship. He completed his PhD degree in Novel Physics Methodologies for Environmental Research from the Department of Mathematics and Physics, Università degli Studi della Campania “Luigi Vanvitelli”, Italy, in January 2015. He secured an excellent grade (“*OTTIMO*”) in his PhD defense. He solved some challenging research problems that are related to natural disaster issues and are of recent interest globally. He received B.Sc. (Hons.) [CGPA 3.72 out of 4.00] and M.Sc. (Thesis Group) [GPA 4.00 out of 4.00] in Physics from Jahangirnagar University in 2009 and 2010, respectively.

His research fields include Plasma Wakefield Acceleration, Simulation, Numerical Analysis of PDE, Turbulence, Water Waves, Rogue Waves, Quantum Methodologies, Coastal Hydrodynamics, Modulational Instability, Nonlinear Phenomena, etc. He supervises M.Sc., M.Phil., and Ph.D. students. He attended many international conferences, workshops, and scientific schools in multidisciplinary fields, thus showing the broadness of his scientific interests. He was involved in the INFN, Italy research project SL_COMB and SL_G-Resist, devoted to plasma-based acceleration at INFN-Napoli. He was also involved in scientific works within the Napoli group of Beam Dynamics and Plasma Acceleration. He has published more than 80 research articles in highly reputed peer-reviewed international journals. He regularly reviews journal manuscripts and is a reviewer of 26 international journals. His research articles are cited more than 1,300 times, and their h-index is 21 and i10-index 44.

He has been awarded the following: (i) Associate Fellow of BAS 2024 in Physical Sciences; (ii) BAS-Gold Medal Award-2022 in Physical Sciences (Junior Group); (iii) Winner of Lindau Online Sciathon 2021 in the category of Unknown Frontiers in Physics, Lindau Nobel Laureate Meetings, Germany; (iv) ENSF (Emerging Nations Science Foundation) prize -2014 for best

poster at Joint ICTP-IAEA College on Advanced Plasma Physics, ICTP-Trieste, Italy; (v) 2nd "Migliori Comunicazioni 2014" of Sec. 4a (Geophysics, physical environment, and physical oceanography) at 100° Congresso Nazionale SIF-2014, Italy; (vi) Fully-Funded PhD Scholarship in 'Novel Physics Methodologies for Environmental Research' 27° cycle at Università degli Studi della Campania "Luigi Vanvitelli", Italy; (vii) Participation as a young researcher of all over the world in the 62nd Lindau Nobel Laureate Meetings-2012, Lindau, Germany; (viii) Participation in Post-conference Programme to the 62nd Lindau Meeting of Nobel Laureates-2012, Baden-Württemberg, Germany.