জনাব পলাশ কুমার সরকার
মুখ্য বৈজ্ঞানিক কর্মকর্তা (চলতি দায়িত্ব)
ইমেইল: palashnib@yahoo.com

শিক্ষাগত যোগ্যতা
এমএস (অনুজীব বিজ্ঞান), ঢাকা বিশ্ববিদ্যালয়, বাংলাদেশ, ২০০৫
বিএসসি (বায়োটেকনোলজি), খুলনা বিশ্ববিদ্যালয়, বাংলাদেশ, ২০০২

অভিজ্ঞতা
অনুজীব বিজ্ঞান, এনজাইম ও ফারমেন্টেশন প্রযুক্তি, মেডিকেল বায়োটেকনোলজি

গবেষণা সংশ্লিস্টতা

- বস্ত্র শিল্পে ব্যবহারের জন্য পরিবেশবান্ধব এনজাইম উদ্ভাবন ও উৎপাদন
- বাংলাদেশর সুন্দরবনের মাটির অনুজীবের বৈচিত্র্যতা নির্ণয় এবং অনুজীবের এন্টিমাইক্রোবিয়াল কম্পাউন্ডে চারিত্রিক বৈশিষ্ট্যয়ন
- বাংলাদেশে স্থানীয় উৎস হতে মানুষের ব্যবহারের জন্য প্রোবায়োটিকসের উন্নয়ন

কর্ম অভিজ্ঞতা

১৮ জুন ২০২৩- বর্তমান: উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা, মাইক্রোবিয়াল বায়োটেকনোলজি বিভাগ, ন্যাশনাল ইনস্টিটিউট অব বায়োটেকনোলজি, গণকবাড়ী, সাভার, ঢাকা, বাংলাদেশ।

০১ জুলাই ২০২২- বর্তমান: ট্রেনিং কোঅর্ডিনেটর (অতিরিক্ত দায়িত্ব), সেন্টার ফর নেক্সট জেনারেশন সিকোয়েন্সিং এন্ড এনালাইটিকস স্থাপন শীর্ষক প্রকল্প, এনআইবি।

১৭ সেপ্টেম্বর ২০১৮- ৩১ জুলাই ২০২২: বিভাগীয় ইনচার্জ, মাইক্রোবিয়াল বায়োটেকনোলজি বিভাগ, ন্যাশনাল ইনস্টিটিউট অব বায়োটেকনোলজি, গণকবাড়ী, সাভার, ঢাকা, বাংলাদেশ।

১০ মার্চ ২০১৫- ১৭ জুন ২০২৩: উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা, মাইক্রোবিয়াল বায়োটেকনোলজি বিভাগ, ন্যাশনাল ইনস্টিটিউট অব বায়োটেকনোলজি, গণকবাড়ী, সাভার, ঢাকা, বাংলাদেশ।

আগস্ট ২০১৫- নভেম্বর ২০১৭: সেমিনার ইনচার্জ (অতিরিক্ত দায়িত্ব), ন্যাশনাল ইনস্টিটিউট অব বায়োটেকনোলজি, গণকবাড়ী, সাভার, ঢাকা, বাংলাদেশ।

জানুয়ারি ২০০৮- ফেব্রুয়ারি ২০১৪: ট্রেনিং কোঅর্ডিনেটর (অতিরিক্ত দায়িত্ব), ন্যাশনাল ইনস্টিটিউট অব বায়োটেকনোলজি, গণকবাড়ী, সাভার, ঢাকা, বাংলাদেশ।

২৮ মে ২০০৬ – ৯ মার্চ ২০১৫: বৈজ্ঞানিক কর্মকর্তা, মাইক্রোবিয়াল বায়োটেকনোলজি বিভাগ, ন্যাশনাল ইনস্টিটিউট অব বায়োটেকনোলজি, গণকবাড়ী, সাভার, ঢাকা, বাংলাদেশ।

Mr. Palash Kumar Sarker
Principal Scientific Officer (CC)

Email: palashnib@yahoo.com

Education

MS (Microbiology): University of Dhaka, Bangladesh, 2005
B. Sc (Biotechnology): Khulna University, Bangladesh, 2002

Research Experience

Microbiology, Enzyme & Fermentation Technology, Medical Biotechnology

Current Research involvement

- Multi Omics Profiling of Soil Microbes of Sundarbans Mangrove Forest of Bangladesh and Characterization of Antimicrobial Compounds
- Development of Eco-friendly Microbial Enzymes for Textile Processing
- Development of Probiotic for Human Health

Work Experience

- **Principal Scientific Officer** (18 June 2023 to date), Microbial Biotechnology Division, National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka, Bangladesh.
- **Training coordinator** (additional charge, 01 July 2021 to date), Establishment of Next Generation Sequencing and Analytics project, National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka, Bangladesh.
- **Division In-charge** (17 Sep 2018 to 31 July 2022), Microbial Biotechnology Division, National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka, Bangladesh.
- **Senior Scientific Officer (**10 March, 2015 to 17 June 2023) Microbial Biotechnology Division, National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka, Bangladesh.
- **Seminar In-Charge** (additional charge**,** August 2015 to Nov 2017), National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka, Bangladesh.
- **Training Coordinator** (Additional charge, 03 Jan 2008 to Feb 2014), National Institute of Biotechnology (NIB), Ganakbari, Savar, Dhaka, Bangladesh.
- **Scientific Officer** (28 May 2006 - 09 March 2015) Microbial Biotechnology Division, National Institute of Biotechnology, Ganakbari, Savar, Dhaka, Bangladesh.

Research Grant

- **Chief Investigator,** Development of Ecofriendly Microbial Enzymes for Textile Processing, Duration: 2014 to till now, funded by National Institute of Biotechnology (NIB) Dhaka, Bangladesh.
- **Chief Investigator,** Screening and characterization of potential microbes for biotechnological applications. Duration: 05 December 2019 to 31 December 2022, funded by establishment of National Gene Bank Project under NIB of Ministry of Science and Technology, Bangladesh.
- **Principal Investigator**, Biochemical and Molecular Assay for Detection of *Vibrio* spp. at Shrimp and Shrimp Farms in Bangladesh, Duration: May 2017 to September 2018, funded by Bangladesh Agricultural Research Council (BARC) NATPII phase, Dhaka, Bangladesh.
- **Associate Investigator,** Cloning and sequencing of alpha amylase gene from native *Bacillus amyloliquefaciens* into *E. coli* and partial characterization of recombinant proteins for textile application. Duration: 01 July 2015 to 30 June 2016, Funded by the Ministry of Science and Technology, Government of Bangladesh.

Publications

A. Published Journal Articles

1. Ekramul Islam, Md. Saddam Hossain, Palash Kumar Sarker, Syeda Tasneem Towhid, Md. Salimullah and Abu Hashem. 2020. Isolation and Characterization of Electrogenic Bacteria from Tannery Wastewater. Bangladesh J Microbiol. 37(1): 23-27.
2. Md. Moniruzzaman, Irfan Ahmed, Saaimatul Huq, Md. Shakur All Mahmud, Sonya Begum, U.S. Mahzabin Amin, Md. Hadisur Rahman, Palash Kumar Sarker, Mohammad Uzzal Hossain, Keshob Chandra Das, Md. Salimullah. 2019. Association of polymorphism in heat shock protein 70 genes with type 2 diabetes in Bangladeshi population. Mol Genet Genomic Med. 00:e1073. https ://doi.org/10.1002/mgg3.1073.
3. Titon Chandra Saha, Anica Tasnim Protity, Fatema Tuj Zohhora, Modhusudon Shaha, Irfan Ahmed, Eti Barua, Palash Kumar Sarker, Sanjoy Kumar Mukherjee, Abanti Barua, Md. Salimullah, and Abu Hashem. 2019. Microbial Fuel Cell (MFC) Application for Generation of Electricity from Dumping Rubbish and Identification of Potential Electrogenic Bacteria. Advances in Industrial Biotechnology. 2 (1): 1-8 (doi: 10.24966/AIB-5665/100010).
4. Modhusudon Shaha, Palash Kumar Sarker, Md. Saddam Hossain, Keshob Chandra Das, Munira Jahan, Shuvra Kanti Dey, Shahina Tabassum, Abu Hashem, Md. Salimullah. 2018. Analysis of the complete genome of hepatitis B virus subgenotype C2 isolate NHB17965 from a patient with uncomplicated chronicity. F1000Research. 7:1023. doi: 10.12688/f1000research.15090.1.
5. Eti Barua, Md. Saddam Hossain, Modhusudon Shaha, Ekramul Islam, Fatema Tuj Zohora, Anica Tasnim Protity, Sanjoy Kumar Mukharjee, Palash Kumar Sarker, Md. Salimullah and Abu Hashem. 2018. Generation of Electricity Using Microbial Fuel Cell (MFC) from Sludge. Bangladesh J Microbiol, 35(1): 23-26.
6. S. M. A. Sayem, A. J. M. T. Chowdhury, M. Z. Alam, P. K. Sarker. 2018. Antibiofilm Activity of Crude Cell Free Extract from *Bacillus subtilis* S01 against *E. coli.* J. Sci. Res. 10(2), 211-221 (2018).
7. Sourav Chakraborty, Kaniz Mohsina, Palash Kumar Sarker, Md. Zahangir Alam, M. Ismail Abdul Karim, SM Abu Saem. 2016. Prevalence, antibiotic susceptibility profiles and ESBL production in *Klebsiella pneumoniae* and *Klebsiella oxytoca* among hospitalized patients. *Periodicum Biologorum*. 118 (1): 53-58. DOI: 10.18054/pb.2016.118.1.3160.
8. Biplab Kumar Dash, M. Mizanur Rahman, and Palash Kumar Sarker. 2015. Molecular Identification of a Newly Isolated *Bacillus subtilis* BI19 and Optimization of Production Conditions for Enhanced Production of Extracellular Amylase. *BioMed Research International*, Volume 2015, Article ID 859805, 9 pages, http://dx.doi.org/10.1155/ 2015/859805.
9. Sarder Nasir Uddin, Apurba Majumder, Khandker Khaldun Islam, Sk. Amir Hossain and Palash Kumar Sarker. Minimum Free Energy Based Evaluation of mRNAs Secondary Structures Constructed by 18

Clinically Significant Exonic Single Nucleotide Polymorphisms (SNPs) and Haplotypes of 5 Missense SNPs of RB1 Gene. *American Journal of Biochemistry and Biotechnology.* 2015, 11 (4): 191-199.

10. Palash Kumar Sarker, Saimon Ahmed Talukder, Promita Dev, SM Abu Sayem, Kaniz Mohsina. 2013. Optimization and Partial Characterization of Cultural Conditions for the Production of Alkaline Protease from *Bacillus licheniformis* P003. *SpirngerPlus*, 2:504.

11. Promita Dev, Md. Saimon Ahmed Talukder, Kaniz Mohsina, Palash Kumar Sarker, SM Abu Sayem. 2013. Production and partial characterization of extracellular amylase enzyme from *Bacillus amyloliquefaciens* P-001. *SpirngerPlus*, 2:154.

12. Naser A., M. H. Rahman, P. K. Sarker and M. S. Akhter. 2012. Isolation and characterization of protease producing bacteria from soil samples of a tannery industry. *South Asian Journal of Agriculture*. 5(1&2).

13. Bidhan Chandra Sarkar, Hasi Rani Saha, Palash Kumar Sarker, Niranjan Kumar Sana, M. Abu Sayeed, Subhagata Choudhury. 2011. Liver Enzymes in Diabetic and Non Diabetic Subjects with clinically Diagnosed Hepatitis. *Ibrahim Medical College Journal*. 5(2):46-50.

14. Palash Kumar Sarker, Bidhan Chandra Sarkar, Keshob Chandra Das, Niranjan Kumar Sana. 2010. Antibody response to *Helicobacter pylori* with among Patients with Suspected Gastric Disease. *Bangladesh Journal of Medical Science.* 16(1): 39-42.

15. Keshob Chandra Das, Bidhan Chandra Sarkar, Palash Kumar Sarker, Niranjan Kumar Sana, Md. Sirazul Islam, M. Abu Sayeed, Subhagata Choudhury. 2010. Thyroid Dysfunction in a Cross Section of Population in Dhaka City. *Bangladesh Journal of Medical Science.* 16(1): 19-23.

16. Khan Mohhamed Ahsan Uddin, Sarder Nasir Uddin, Feroz Ahmed, Palash Kumar Sarker. 2008. Analgesic and Anti-Diarrhoeal Activities of *Trema orientalis* in Mice. *Bangladesh Journal of Medical Science*. 14(2): 121-124.

17. S Nandy, PK Bhowmik, SK Basu, PK Sarker and AKMS Alam. 2008. Application of genomics and proteomics in jute and allied fiber (JAF) improvement. *Bangladesh Journal of Progressive Science and Technology*. 6(1): 293-296.

18. M. R. Khatun*, Md. Arifuzzaman, A. Ashraf, A. Roy, M. S. B. Salam, and P. K. Sarker. 2008. Study on Lactation Length and Daily Milk Yield of Buffaloes at Baffalo Breeding and Development Farm at Bagerhat. *Nuclear Science and Applications*. 17 (1&2): 76-80.

19. Palash Kumar Sarker, Khan Mohhamed Ahsan Uddin, Mahmud Morshed Sagar, Sarder Nasir Uddin, Feroz Ahmed. 2007. Antibacterial, Cytotoxicity and Antioxidant activity of *Trema orientalis*. *Bangladesh Journal of Medical Science*. 13(2): 138-143.

20. Isidore Gomes, Palash Kumar Sarker, Sabita Rezwana Rahman, M Abdur Rahman and Donald James Gomes. 2007. Production of Cellulase from *Talaromyces emersonii* and Evaluation of Its Application in Eco-Friendly Functional Finishing of Jute-Based Fabrics. *Bangladesh J Mirobiol*. 24 (2): 109-114.

21. Palash Kumar Sarker, Isidore Gomes, Mahboob Ali and Donald James Gomes. 2006. Enzymatic Desizing of Jute-Based Fabrics with Mixed Enzyme System from *Talaromyces emersonii*. *Bangladesh J Microbiol*. 23(1): 8-12.

22. Isidore Gomes, Salil Kumar Bhowmic, M Emdadul Islam, Palash Kumar Sarker, Sabita Rezwana Rahman and Donald James Gomes. 2005. Application of *Trichoderma koningi* Enzymes for Biofinishing of Jute-Based Fabrics. *Bangladesh J Microbiol*. 22(1): 59-63.

23. Mahmud Morshed Sagar, Khandker Khaldun Islam, Md. Raihan Ali, S. M. Abdul-Awal, Partho Protim Adhikary, Palash Kumar Sarker and Abu Syed Md. Rakib. 2005. Bacteriophage: A Potential Therapeutic Agent. *J Med. Sci.* 5 (1): 1-9.

B. Seminar/Conference Papers

1. Biplab Kumar Dash, Palash Kumar Sarker*, Md. Mizanr Rahman. Optimization of Culture Parameters to Enhance Amylase Production by newly isolated Bacillus sp. YoungBB 3rd National Congress 2012, Shahjalal University of Science and Technology, Sylhet, Bangladesh, 23 March 2012.

2. Promita Dev, Md. Saimon Ahmed Talukder, Kaniz Mohsina, Palash Kumar Sarker, SM Abu Sayem. 2013. Production and partial characterization of extracellular amylase enzyme from *Bacillus amyloliquefaciens* P-001. YoungBB 4th National Congress 2014, University of Dhaka, Bangladesh, 26 April, 2014.
3. Fatema Tuj Zohora, Md. Rasel Bhuiyan, Md. Ashraful Jahan, **Abu Hashem**, Palash Kumar Sarker. Production of Extracellular Amylase Enzyme by a Newly Isolated Bacillus sp. RS-2 from Food Waste Dumping Area at Savar. National Conference on Biochemistry, Industry and Sustainable Economy, Department of Biochemistry and Molecular Biology, University of Dhaka, Bangladesh, 21 March 2015.
4. Nirmal Chandra Barman, Fatema Tuj Zohora, Palash Kumar Sarker, Nilufa Akhter Banu, Md. Salimullah, **Abu Hashem**. Identification, Production and Partial Characterization of Keratinase Enzyme Secreted by Arthrobacter sp. Isolated from Hair Dumps Soil Samples, BABG 1st National Congress, Jahangirnagar University. 28 April 2017.
5. Toma Rani Majumder, Rifat Akter, Biplab Kumar Dash, Abu Hashem, Zakaria Mia, Md. Salimullah, Palash Kumar Sarker*. Alpha amylase production in shake flask and lab fermenter by two strains of *Bacillus subtilis.* 10th AFOB REGIONAL SYMPOSIUM 2018 (Innovations in Biotechnology for Economic Development), Department of Microbiology, University of Dhaka. 27-29 January, 2018.
6. Sugandha Paul†, Md. Hassan Al Banna†, Sumaiya Sharmin†, Sanjoy Kumar Mukharjee, Ahsan Habib, Tahrima Arman Tusty, Modhusudon Shaha, S. M. Abu Sayem, Md. Salimullah, Abu Hashem, Palash Kumar Sarker*****. Production, *in silico* molecular characterization and partial purification of a keratinase enzyme from recombinant *Escherichia coli* PHL565. 36th BSM Annual Conference at Shahjalal University of Science and Technology. Sylhet, Bangladesh, 19-20 January, 2023.
7. Md. Rafiuzzaman†, Tahrima Arman Tusty†, Sugandha Paul, Sumaiya Sharmin, Iqbal Kabir Jahid, Abu Hashem, Palash Kumar Sarker*. Production and *In-silico* Characterization of Alpha-Amylase by Newly Isolated *Bacillus subtilis* S108 from Municipal Solid Waste. 36th BSM Annual Conference at Shahjalal University of Science and Technology. Sylhet, Bangladesh, 19-20 January, 2023.
8. Md. Saddam Hossain#, Afroza Aktar Sharna, Sumaiya Sharmin, Tahrima Arman Tusty, Abu Hashem, Palash Kumar Sarker*. Antimicrobial Activity and Genome Analysis of Biosynthetic Gene Clusters of five *Pseudomonas* sp. from Marine Soil Sediments. Conference on Biotechnology in Sustainable Development at Biotechnology and Genetic Engineering Discipline, Khulna University, Dhaka, Bangladesh, 7-8 October, 2023.
9. Tahrima Arman Tusty #, Sumaiya Sharmin, Abu Hashem, Palash Kumar Sarkar*. Molecular Modeling, Gene Cloning and Expression of α-Amylase of *Bacillus Subtilis* S108 in *Escherichia coli.* Conference on Biotechnology in Sustainable Development at Biotechnology and Genetic Engineering Discipline, Khulna University, Dhaka, Bangladesh, 7-8 October, 2023.
10. Afroza Aktar Sharna#, Md. Saddam Hossain, Md. Morsaline Billah, Abu Hashem, Palash Kumar Sarker*****. Screening and Antibacterial Properties of Actinomycetes isolated from Sundarbans Mangrove Forest, Bangladesh. Conference on Biotechnology in Sustainable Development at Biotechnology and Genetic Engineering Discipline, Khulna University, Dhaka, Bangladesh, 7-8 October, 2023.

C. Theses Supervision

1. Armanul Naser (2011). Isolation and Characterization of Protease Enzyme Producing Bacteria from Tannery Industry. B. Sc Thesis. NIB and Biotechnology and Genetic Engineering Discipline, Khulna University Joint program (supervisor- Mr. Palash Kumar Sarker)
2. Biplab Kumar Dash (2012). Production of extracellular Amylase Enzyme by Bacillus sp. Isolated from soil samples. M. Sc Thesis. NIB and Dept. of Biotechnology and Genetic Engineering, Islamic University joint program. (Supervisor- Mr. Palash Kumar Sarker).
3. Promita Dev (2012). Optimization of Environmental and Nutritional conditions for the production and characterization of an extracellular amylase by Bacillus amyloliquefaciens P001. B. Sc Thesis. NIB and Biotechnology and Genetic Engineering Department, Shahjalal Science and Technology University joint program. (Supervisor- Mr. Palash Kumar Sarker).

4. Saimon Ahmed Talukdar (2012). Studies on Alkaline Protease enzyme from Bacillus licheniformis P003. M. Sc Thesis. NIB and Biotechnology and Genetic Engineering Department, Shahjalal University of Science and Technology joint program. (Supervisor- Mr. Palash Kumar Sarker)
5. Maidul Islam (2013). Production of Cellulase Enzyme from Bacillus sp. M. Sc Thesis. NIB and Biotechnology and Genetic Engineering Department, Mawlana Bhashani Science and Technology University joint program. (Supervisor- Mr. Palash Kumar Sarker)
6. Fatema Tuj Zohora (2013). Production of Extracellular Amylase Enzyme from newly isolated Bacillus sp. For Removal of sizing material from cotton-based fabrics. M. Sc Thesis. NIB and Biotechnology and Genetic Engineering Department, Shahjalal University of Science and Technology joint program. (Supervisor- Mr. Palash Kumar Sarker)
7. Md. Rasel Bhuiyan (2013). Production and partial characterization of cellulase enzyme by newly isolated Bacillus sp. from decomposed agricultural residue. M. Sc Thesis. NIB and Biotechnology and Genetic Engineering Department, Shahjalal University of Science and Technology joint program. (Supervisor- Mr. Palash Kumar Sarker)
8. Md. Rafiuzzaman (2016). Production and characterization of amylase by newly isolated Bacillus sp. From municipal solid waste. M. Sc Thesis. NIB and Department of Microbiology, Jessore University of Science and Technology. (Supervisor- Mr. Palash Kumar Sarker)
9. Md. Shofiul Alam (2016). Production of cellulase enzyme under submerged fermentation using Bacillus sp. P044. M. Sc Thesis. NIB and Department Microbiology, Jagannath University. (Supervisor- Mr. Palash Kumar Sarker)
10. Rifat Akter (2017). Isolation and characterization of amylase producing bacteria from landfill soil. M. Sc Thesis. NIB and Department of Microbiology, Jagannath University. (Supervisor- Mr. Palash Kumar Sarker).
11. Toma Rani Majumder (2018). Production of extracellular amylase by two strains of *Bacillus Subtilis* in submerged cultivation. M. Sc Thesis. NIB and Department of Genetic Engineering and Biotechnology, Jessore University of Science and Technology. (Supervisor- Mr. Palash Kumar Sarker).
12. Maruf Hussain (2018). Occurrence and Molecular identification of Vibrio spp. from Shrimp and Shrimp farms at Bagerhat and Khulna. M. Sc Thesis. NIB and Department of Microbiology, Jessore University of Science and Technology. (Supervisor- Mr. Palash Kumar Sarker)
13. Md. Arifuzzaman (2018). Isolation and Characterization of Vibrio spp. from soil and water of shrimp farms. M. Sc Thesis. NIB and Biotechnology and Genetic Engineering Discipline, Khulna University. (Supervisor- Mr. Palash Kumar Sarker).
14. Md. Mohsin Alam (2018). Synthesis of Amylase Enzyme and Application on Woven Fabric to Develop Single Bath Combined Enzymatic Pretreatments and Dyeing with Reactive Dye. M. Sc Thesis. NIB and Department of Textile Chemical Engineering, Bangladesh University of Textiles. (Supervisor- Mr. Palash Kumar Sarker).
15. Md. Hassan Al Banna (2019). Production, Optimization & Partial Purification of Keratinase Enzyme from recombinant E. coli PHL565". M. Sc Thesis. NIB and Dept. of Biotechnology and Genetic Engineering, Khulna University joint program. (Supervisor- Mr. Palash Kumar Sarker).
16. Khadiza Akter (2021). Isolation and Characterization of Alkaline Protease Producing Bacteria. M. Sc Thesis. NIB and Dept. of Microbiology, Noakhali Science and Technology University joint program. (Supervisor- Mr. Palash Kumar Sarker).
17. Kaniz Fatema (2021). Isolation, Screening and Identification of Amylase Producing Bacteria from Different Soil Sample of Savar, Bangladesh. NIB and Dept. of Microbiology, Noakhali Science and Technology University joint program. (Supervisor- Mr. Palash Kumar Sarker).