

Dr. Surajit Debnath , PhD

Young Scientist Awardee by DBT , DST , CSIR

AWARDS and GRANTS

1. **CSIR, Govt. of India Grant** for Oral Presentation in *Royal College of Pathologists, London, UK*. 28th February 2013. (CSIR Ref No: PFA/1404/12-HRD, dated Dec 24,2013).
2. **Sir Tata Young Scientists Grant** to attend CME on Biomarker Discovery , *Royal College of Pathologists, London, UK*. (TATA Grant Ref no: Memo/E/1/2013-14 , dated April 16, 2013).
3. **DST, Govt. of India Young Scientist Award** for Oral Presentation in *International Conference on Human Genetics, Copenhagen, Denmark* , June 2012 . (DST Ref No: SR/ITS/0823/2012-2013, dated 13, May, 2012).
4. **DBT, Govt. of India Young Scientist Award** for Oral Presentation in *ICAAA, Hong-Kong* (2011) (DBT Ref No: IITG/P/DOFA/02, dated 06, June, 2011).

PATENTS FILED:

1. Title of the Patent Filed: **System for rapid and low-cost detection of mutation effect in proteins for initial screening.** *Docket No -7558 ., Indian Patent.*
Author: Surajit Debnath.
2. Title of the Patent Filed: **Easy to use cost-effective system for primary mapping of water pathogens in localities.** *Docket No -7848 .,Indian Patent.*
Joint Patent Author: Surajit Debnath.

PEER REVIEWED PUBLICATIONS

1. R, B.C., D, B., B, D., **Surajit Debnath.**, R, D. and M, T.S., 2023. Investigations on a mononuclear Cu (ii) Schiff base complex: theoretical calculations, catechol oxidase activity, and protein binding interaction analysis. *New Journal of Chemistry*, 47(25), pp.11928-11944. (SCOPUS/SCI/PUBMED/UGC) *Publisher: Royal Society of Chemistry*
<https://pubs.rsc.org/en/content/articlehtml/2023/nj/d3nj01515g>
2. **Surajit Debnath.**, 2023. Peptide based composites for biomedical application: focus on the new age of pathogen control. In *Green Sustainable Process for Chemical and Environmental Engineering and Science* (pp. 219-238).. (SCOPUS), *Publisher: Elsevier Europe.* <https://www.sciencedirect.com/science/article/abs/pii/B9780323951692000134>
3. **Surajit Debnath.**, 2023. Quantitative Monitoring and Analysis of Rare Symptoms of COVID-19 Infection: Application of a Text and Citation Management Software as a Tool. *Redefining Virtual Teaching Learning Pedagogy*, pp.169-183. (SCOPUS), *Publisher: Wiley, Europe*
<https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119867647.ch10>
4. **Surajit Debnath.**, 2022. Antibiotic resistance in biofilm-forming pathogenic Coliforms & the role of membrane proteins. In *A Complete Guidebook on Biofilm Study* (pp. 273-287). Academic Press. (SCOPUS) , *Publisher: Elsevier.*,
<https://www.sciencedirect.com/science/article/abs/pii/B978032388480800011X>

5. **Surajit Debnath**, 2022. Downstream Processing of Waste Biomass: From Biophysical Aspects of Biomass Yield to Engineered Microbial Cells for Better Harvesting. In *Biotechnology for Waste Biomass Utilization* (pp. 203-229). Apple Academic Press. (SCOPUS), Publisher: Taylor & Francis, <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003277187-8>
6. **Surajit Debnath**, 2019. Characterization of extracellular proteins to explore their role in bio-flocculation for harvesting algal biomass for wastewater treatment. *The role of microalgae in wastewater treatment*, pp.229-266. (SCOPUS), Publisher: Springer, Singapore. https://link.springer.com/chapter/10.1007/978-981-13-1586-2_18
7. **Surajit Debnath**, S. Addya. (2015)., Mis-sense mutations in Tafazzin (TAZ) that escort to mild clinical symptoms of Barth syndrome is owed to the minimal inhibitory effect of the mutations on the enzyme function: in-silico evidence. *Interdisciplinary Sciences: Computational Life Sciences* 7.1: 21-35. (SCOPUS/SCI/PUBMED/UGC). Publisher: Springer. <https://link.springer.com/article/10.1007/s12539-013-0019-6>
8. **Surajit Debnath**, S. Addya. (2014)., Structural basis for heterogeneous phenotype of ERG11 dependent Azole resistance in *C. albicans* clinical isolates. *Springerplus* 3.1 (2014): 1-16. (SCOPUS/SCI/PUBMED/UGC) Publisher : Springer <https://springerplus.springeropen.com/articles/10.1186/2193-1801-3-660>
9. D, U C, **Surajit Debnath**, and R G. (2014)., Preliminary screening for in vitro anti-enteritic properties of a traditional herb *Dillenia pentagyna* Roxb. fruit extracts. *Asian Pacific Journal of Tropical Medicine*., 7: S332-S341. (SCOPUS/SCI/PUBMED/UGC). Publisher : Elsevier. <https://www.sciencedirect.com/science/article/pii/S1995764514602558>
10. **Surajit Debnath** (2017)., Preliminary studies on the inhibition potential of Indian domestic curd against coliforms, an emerging periodontal pathogen. *Journal of Indian Society of Periodontology*., 21.5: 357.(SCOPUS/SCI/PUBMED/UGC), Publisher : Society of Perio., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5827501/>
11. **Surajit Debnath** (2016)., BMI is a better indicator of cardiac risk factors, as against elevated blood pressure in apparently healthy female adolescents and young adult students: Results from a cross-sectional study in Tripura. *Indian Journal of Community Medicine*., 41(4), 292. (SCOPUS/SCI/PUBMED/UGC), Publisher : Society of Community Medicine., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5112971/>
12. **Surajit Debnath** (2010)., A review on the physiology of Insulin like Growth Factor-I (IGF-I) peptide in bony fishes and its phylogenetic correlation in 30 different taxa of 14 families of teleosts. *Advances in Environmental Biology* 5.1: 31-52., (SCOPUS/SCI/UGC)
13. S.B,N.R, **Surajit Debnath** and A.S.,(2008) Impact of Climate Changing Environment on Survival Potential of the Fish *Nandus nandus* (Ham.) in Tripura., *Environment and Ecology* ; 26(1): 86-90., ISSN: 0970-0420.
14. S.B,N.R, **Surajit Debnath** and A.S.,(2008) Impact of Climate Changing Environment on Growth Efficiency of *Nandus nandus* (Ham.) in Tripura. *Environment and Ecology* ; 26(1): 142-144., ISSN: 0970- 0420.

15. **Surajit Debnath (2011).**, Current research on *Clarias batrachus*, the medicinal fish. *Tropical Freshwater Biology* 20 : 25.,DOI:[10.4314/tfb.v20i1.3](https://doi.org/10.4314/tfb.v20i1.3)
16. **Surajit Debnath (2011).**, *In-silico* studies of Indian Catfish : An update ., *International Research Journal of Applied and Basic Sciences*. Vol., 2 (8), 303-319. ISSN: 2251-838X ., <https://europub.co.uk/articles/4848>
17. **Surajit Debnath , R.Gupta (2009).**, Phylogenetic Inference from the Correlation of Some Microsatellite DNA Segments for Indirect Assessment of Genetic Diversity in the Asian Catfish, *Clarias batrachus*. *IU Journal of Computational Mathematics*. Vol.II,No.2,2009. ISSN:0974-6544. www.iupindia.in/609/IJCM_Phylogenetic_Inference_22.html

Full papers in Peer Reviewed International Conference Proceedings

- a) **Surajit Debnath, S. Addya. (2012).**, Investigation of Genetic Epidemiology of Metabolic Compromises in β Thalassemia Minor Mutation: Phenotypic Pleiotropy. *Proceedings of the International Conference on Human Genetics , Copenhagen , 2012.*, *International Journal of Medical and Health Sciences* 6.6: 265-269. DOI: doi.org/10.5281/zenodo.1334808
- b) **Surajit Debnath (2011).**, *Clarias batrachus*, the medicinal fish: An excellent candidate for aquaculture and employment generation. *Proceedings of International Conference on Asia Agriculture and Animal, Hongkong , July 2011 IPCBEE vol.13 (2011) © (2011) IACSIT Press, Singapore. ISSN:2010-4618, pp32-37. (Citations: 50 , as on March 2021).*

Abstracts in Peer Reviewed International Journals

- a. **Surajit Debnath, S. Addya. (2013).**, Correlates of Anthropometric Measures with Salivary Metabolites in a Subsample of College Women in Suburban North East India., *Journal of Diabetes., Wiley Publishers., Volume 5, Issue s1.*, https://onlinelibrary.wiley.com/doi/epdf/10.1111/1753-0407.12032_1
- b. **Surajit Debnath (2012).**, Vitamin D deficiency and elevation of para-thyroid in Thalassemia minor: a case study., *Endocrine Abstracts (2012) Volume 29.,P413.*, ISSN 1479-6848.
- c. **Surajit Debnath, S. Addya. (2013).**, Recent Epidemiology of Human Protozoan Parasites in terms of PdIR (Protozoan disease Information Report) using Data Mining. *Clinical Microbiology and Infection (CMI), the official journal of ESCMID* https://www.escmid.org/escmid_publications/escmid_elibrary/?q=Surajit+Debnath&id=2173&L=0&x=0&y=0

Invited Talks Delivered as Resource Person / Workshops Delivered

1. Invited Talk as Resource Person on –“AI & ML for Biomedical Research”. In *Seminar on Advanced Teh Conducted by Techno India University ,, Tripura, 29th September 2023.*
2. Invited Talk as Resource Person on –“Optimization of Bio-diesel Production”. In *AICTE (ATAL) – FDP. On Research Trends in Separation & Purification Techniques Conducted by NIT , Raipur (National Institute of Technology) ,13-09-2021 to 17-09-2021 .*

3. Invited Talk as Resource Person on –“Biomedical Device : Design of Cardia Monitors”. In *AICTE (ATAL) – FDP. On Design Thinking & Product Development Conducted by NIT , Arunachal Pradesh (National Institute of Technology) ,23-08-2021 to 27-08-2021 .*
4. Invited Talk as Resource Person on –“AI & ML for Biomedical Research”. In *AICTE (ATAL) – FDP. On AI , ML & IOT Conducted by Aligarh Muslim University ,21-06-2021 to 25-06-2021 .*
5. Invited Talk as Resource Person on –“Protein Engineering & Peptide Design”. In *AICTE (ATAL) – FDP. On Nanosciene & Nano technology, Conducted by MVIT ,20-09-2021 to 24-09-2021 .*
6. Invited Talk as Resource Person on –“Bio-Electric Signals, Propagation, Analysis and Instrumentation with Introduction to Hands-on Simulation of signalling Bio-molecule using a PYTHON based Server”. In *AICTE (ATAL) – FDP on Biomedical Instrumentation: What and how to teach. Conducted by Rajasthan Technical University, Rajasthan, Jaipur ,24-28th August 2020.*
7. Invited Talk as Resource Person on –“Instrumentation of Cardiac Pacemakers and Hands-On-Session with a PYTHON program using Myosin protein of heart”. In *AICTE (ATAL) – FDP on Innovation in Medical Devices and Impact of IOT in Tele-health for rural India. Conducted by RMKE Engineering College, Anna University, Tamilnadu, 14-18th September 2020.*
8. Invited Talk as Resource Person on – “Cardiac signals of biomedical importance”. In *AICTE (ATAL) – FDP on Signal Processing and Machine Learning Algorithms for Biomedical Data analytics in Health Care. Conducted by Coimbatore Institute of Technology, Anna University, Tamilnadu, 21-25th September 2020.*
9. Invited Talk as Resource Person on – “Analogy of Machine Learning and Molecular Learning: Hands-on Session on COVID19 Proteomics”. In *AICTE (ATAL) – FDP on Computational Science and Biology. Conducted by National Institute of Technology, Arunachal Pradesh, 5-9th October 2020.*
10. Invited Talk as Resource Person on – “Biophysical Aspects of Waste biomass reutilization and microbe based systems”. In *AICTE (ATAL) – FDP on Waste Technology, Conducted by CV Raman Global University, Orissa, 21-25th December 2020.*
11. Invited Talk as Resource Person on –“Quadruplet substitution for enhanced stability of Basic Fibroblast Growth Factor / FGF2”. In *DBT Sponsored International Conference on Translational Biotechnology- 2016 , Conducted by Department of Biotechnology , MN-NIT , Allahabad .Uttar Pradesh. February 2016.*
12. Invited Talk as Resource Person on –“HLA type and natural resistance to HIV serotypes: Elaborating Immunoinformatics”. In *CSIR Sponsored National Seminar on Genomic and Cultural Variation of Indian Population, Conducted by Department of Anthropology, SV University, Tirupati , Telangana, February 2017.*

13. Invited Talk as Resource Person in ***DBT Sponsored Regional Workshop cum Training Programme on Application of Bioinformatics Tools and Techniques in Fisheries***, Aquaculture and Life sciences. *Bioinformatics Centre , College of Fisheries, Central Agricultural University (CAU), Lembucherra. October 21-23, 2013.*
14. Invited Talk as Resource Person in ***DBT Sponsored Workshop for College Teachers in Tripura “Hands on Bioinformatics Techniques and Fisheries Database”*** organized by Bioinformatics Centre of College of Fisheries, Central Agricultural University (CAU), Lembucherra from 21-23 , January ,2014.
15. Invited mentor in Internship Workshop on “COVID 19 : Exploring uncommon epitopes for a stable immune response through MHC1 binding”, In *Genomics & Proteomics , Sponsored by H-Bio, Nigeria during Aug-Sep 2020.*
16. Invited mentor in 5 days Workshop on “*In-silico Protein Engineering for Industrial & Biomedical Applications*”, Sponsored by EGene Biomed (OPC) , Gurgaon , UP , Sep 2020.
17. Invited mentor in 5 days Workshop on “*NGS Data Analysis & Proteomics*”, Sponsored by Spectrum Bioscience (LLP) , Pune , Maharashtra , March 2021.

MOOCS DEVELOPED for Industry:

- a) MOOCS on ML & Data Science for In-Silico Biotechnology ,
Industry Partner OMICS LAB Pvt Ltd , NCR
Link : https://docs.google.com/document/d/1Nz_-zXyl-BdO6B-BrgNgEocbc1OwQCxfB74a3KczLs/edit?usp=sharing
- b) MOOCS on ML for R&D in Biotechnology ,
Industry Partner : Biosetup Life Sciences Pvt Ltd , Patna
Link : https://docs.google.com/document/d/1VjVf_PXt15Vxm1T5PqgaXYNJ19cMSdda1YpGcAynEk0/e/dit?usp=sharing

Popular Literature

1. Literature as an outcome of International mentoring workshop –**Surajit Debnath et al (2020)**., COVID19: Exploring uncommon epitopes for a stable immune response through MHC1 binding. DOI: <https://doi.org/10.1101/2020.10.14.339689>
2. Book - **Surajit Debnath (2012)** ., Some Physiological and Biochemical Aspects of A Rare Tropical Fish: Morphometrics to Computational Biology. Publisher: Lap Lambert Academic Publishing AG & Co Kg , Germany ISBN 13: 9783847348689 ISBN 10: 384734868X.
3. **Surajit Debnath (2009)** ., Traditional Consumption of Magur (*Clarias batrachus*) an Air Breathing Catfish among the Population of North Eastern India is rationalized by Its Blood Lipid Parameters. *CHEMFERENCE-IITM. (Citations =07 as on March 2021).*

4. Book - **Surajit Debnath (2012)**.,Evaluation of Hemoglobinopathies in Resource Limited Set-ups and In-silico Studies on Iron Binding Proteins. Lap Lambert Academic Publishing AG & Co, Germany ISBN 978-3-659-20612-2.
5. **Surajit Debnath (2008)**.,Occurrence of morphological deformities in wild *Clarias batrachus* , in a natural ecosystem of Tripura, North east India , A possible case of stress induced polyploidy as revealed by Erythrocyte Examination. *BioAsia*, 2008. (Citations =01 as on March 2021).
6. Book Chapter- **Surajit Debnath (2012)**.,Chapter-08, A Review of Computational Biology and Bioinformatics Driven Research in Indian Catfish. Applied Computational Biology and Statistics in Biotechnology and Bioinformatics. Edited by: Prof Ajit K. Roy. Publisher: *New India Publishing Agency,New Delhi* ., ISBN 10: 9380235925.
7. Book - **Surajit Debnath (2012)**.,New-Age Economics: The Sustainable Model of Hongkong SAR: Neo-Confusian Practice ., Lambert Academic Publishing AG & Co, Germany .,ISBN-13 : 978-3848487271.
8. **Surajit Debnath (2008)**., Fishing Business For Sustainable Development: Current Scenario In IndoAsia. Online Article in Aquafind.com.
http://aquafind.com/Fishing_business.php
9. **Surajit Debnath (2019)**., Proceedings for the “Workshop on Blood Borne Virus HIV:Monitoring the burden” , Sponsored by TACS , Tripura.25th January , 2019.
10. **Surajit Debnath (2019)**., A manual on the Occasion of Swacha Bharat Mission “Rainwater harvesting and other sustainable practices” 2019.

WORK EXPERIENCE:

1. Lecturer, Nalanda Educational Institution, Vijaywada, Affiliated to Nagarjuna University, Guntur, Andhra Pradesh (Academic session 2004 - 2005).
2. Research Assistant- DBT Sponsored Project in Department of Life Science, Tripura University, Suryamaninagar. (April 2005-April 2006).
3. Junior Research Fellow- DST Sponsored Project in Department of Life Science, Tripura University, Suryamaninagar. April 2006 (RefNo.F.3 (392) TU/03, dated: 13-04-2006) to September 2007.
4. Lecturer, Biotechnology (UGC Scale)- ICFAI University Tripura from 18-09-2007 to 31-03-2010.
5. Guest Faculty - Biochemistry & Microbiology, Vinayaka Mission Study Centre.(Academic Session 2007-2008).
6. Guest Faculty - Biochemistry, Department of Life Science, Tripura University, Suryamaninagar. 2007-08 (Ref.No.F.TU/FCPGS/GL...Dated:11-12-2007).
7. Guest Faculty- Bioinformatics for M.F.Sc, College of Fisheries, Lembucherra under CAU, Imphal. Session 2007-2008.
8. Lecturer, Department Medical Laboratory Technology, Women’s Polytechnic, Hapania, Government of Tripura. 25-06-2010 to 11-01-2016.

9. Lecturer (Senior Scale), Department Medical Laboratory Technology, Women's Polytechnic, Hapania, Government of Tripura from 12-01-2016 onwards.

Outreach Activities

1. Visited G.W.Gothe University, Frankfurt, Germany 2012.
2. Papers Reviewed - *Gene Journal*- ISSN:0378-1119 - Elsevier, *Biomed Research International*- ISSN: 2314-6133- Hindawi Publishing , *BMC Complementary & Alternative Medicine*- ISSN 1472-6882 -Bio Med Central , *Journal of Clinical and Diagnostic Research*-ISSN:0973-709X , *Egyptian Journal of Human Genetics*-ISSN 1110-8630-Elsevier.
3. Membership of Professional Organizations:
Senior Member , APCBEES, Hong Kong (Senior Membership No:200206).
Member , IACSIT, Singapore (Membership No: 80340986)
4. Major Laboratory exposure –
-Bioinformatics Facility, *IIT ,Kharagpur* , September, 26-27, 2008 –Sponsored by ICFAI University , Tripura.
-Cytogenetics facility, 29th November to 1st December, 2012 ., *AIIMS , New Delhi*.
-DNA Fingerprinting Facility, National Bureau of Plant Genetic Resources, *NBPGR, New Delhi* , 26th -28th November 2012.
-Biomedical Engineering Lab, *IIT, Guwahati*. 25th February– 1st March, 2015.
5. National Advisory Committee Member, National Seminar on Marine Natural Products as Pharmaceutical Agents. 17-18 September 2019, *Sponsored by DBT , Organized by Sathyabama University , Chennai , Tamil Nadu*.
6. National Advisory Committee Member, International Conference on Intelligent Computing , Smart Communication and Network Technologies., 26th -27th March 2021 , *Sponsored by ISTE, CSI., Organized by RMKE Engineering College , Anna University , Tamilnadu*.
7. Organizing Secretary, STEDAL 2020, Sponsored by Ministry of Tribal Affairs in association with TRCI, Govt of Tripura.
8. Interview with LrkAI Health Care Pvt Ltd , Bhubaneshwar , Orissa on Industrial Biotechnology on 22-08-2020 through Facebook Live was viewed 4000 times (4K Views).

Oral Presentation in International / National Conferences & Workshops/Training

Presented Research Papers in many International and National Conferences. Attended several Workshops and Training.

March 2023 , Agartala , Tripura

Dr.Surajit Debnath