CURRICULUM VITAE

PROF. PRATYOOSH SHUKLA,

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Google scholar citation :(Citations: 13197 H-index: 65, i10 Index 182) (as on 2nd October 2025)

https://scholar.google.co.in/citations?hl=en&user=MG9aCDUAAAAJ&view_op=list_works&sortby=pubdate

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ResearchGate: https://www.researchgate.net/profile/Pratyoosh_Shukla

Profile: https://loop.frontiersin.org/people/247259/overview

https://en.wikipedia.org/wiki/Pratyoosh_Shukla

RESEARCH INTERESTS: Enzyme Technology and Microbial Biotechnology; Protein Bioinformatics

EDUCATIONAL DETAILS:

Degree	Year	Board/Univ.	Division	%	Subjects
B.Sc.	1997	A.P.S. University. Rewa, M.P., India	1st	75.0%	Botany, Zoology, Chemistry. Foundation Courses
M.Sc.*	1999	Dr. Hari Singh Gour University, Sagar, M.P. India	1st	75.9%	Applied Microbiology and Biotechnology
Ph.D.	2002	A.P.S. University, Rewa, M.P., India	Awarded		Microbiology
D.Sc.	2020	Barkatullah University, Bhopal, M.P. India	Awarded		Microbiology

**University Topper- Stood First in order of Merit*

- **EMPLOYMENT:**

S. No.	Organization	*From*	*To*	*Designation*
1.	National Law University, Jodhpur, India	July 8, 2002	Mar 19, 2003	Astt Lecturer (Life Science)
2.	Birla Institute of Technology, Mesra, Ranchi, India	Mar 21, 2003	Sep 30, 2005	Lecturer
3.	Birla Institute of Technology, Mesra, Ranchi, India	Oct 1, 2005	Sep 18, 2007	Sr. Lecturer
4.	Birla Institute of Technology, Mesra, Ranchi, India	June 1, 2007	May 31, 2010	Reader
5.	Birla Institute of Technology, Mesra, Ranchi, India	June 1, 2010	Dec 18, 2011	Associate Professor
6.	Maharshi Dayanand University, Rohtak, Haryana, India	Dec 19, 2011	May 31, 2013	Associate Professor & HOD
7.	Maharshi Dayanand University, Rohtak, Haryana, India	June 1, 2013	Nov 6, 2020	Professor & HOD
8.	Banaras Hindu University, Varanasi, India	May 19, 2022	May 18, 2025	Coordinator
9.	Banaras Hindu University, Varanasi, India	Nov 7, 2020	Continuing	Professor

EXPERIENCE:

TEACHING [UG/PG]: 25 Years (2000-2025)

RESEARCH: 23 years (2002-2025) (post Ph.D.)

Patent: 04 (Filed)

PUBLICATIONS:

a. SCI Journals: 230
b. Book Chapters: 44
c. Edited Books /Books authored:09

OTHERS:

- Journal special issue:05
- Invited Talk/Plenary Lectures/Expert talk/Resource Person:88
- Cumulative career total Impact Factor (Thomson Reuters) -870+
- No of SCI Publications in last 6 Years (2016-2024):160 *(Avg IF- 5+)*
- Total cumulative IF (7 Years) –750+

Patent: 04 (Filed)

S. No	Title	Application No.	Date of filing	Publication status
1.	**A NOVEL QUATERNISED AMYLOPECTIN BASED BIOPOLYMER FOR ENHANCED MICROALGAL BIOMASS HARVESTING**	202411042904	03/06/2024	*Published by Patent Office Journal No. 28/2024 dated 12/07/2024*
2.	**NATURAL GALACTOMANNAN BASED SUSTAINABLE BIOPOLYMER FOR DOWNSTREAM MICROALAGAL DEWATERING**	202511013432	17/02/2025	*Published*
3.	**EFFECTUAL PRODUCTION OF PHYCOSYNTHESIZED SILVER NANOPARTICLES FOR HAZARDOUS DYES REMEDIATION**	202511055058	07/06/2025	*In process*
4.	**EFFICIENT ARTIFICIAL INTELLIGENCE- MACHINE LEARNING BASED BIOPROCESS TOWARDS ENHANCED POLYHYDROXYBUTYRATE (PHB) BIOPOLYMER PRODUCTION**	202511070330	23/07/2025	*In process*

AWARDS AND SCIENTIFIC RECOGNITION

- Fellow, National Academy of Sciences **(FNASc)** [2025]
- Prof. CNR Rao Foundation Award for Excellence in Scientific Research (2024)
- Fellow, National Academy of Agricultural Sciences **(FNAAS)** [2020]
- Fellow, Biotech Research Society of India **(FBRS)** [2018]
- Most Productive Researcher Award, BHU, Varanasi (2021)
- **Featured among a list of Indian Researchers who were Top 2% in 2019, 2020, 2021, 2022 –Stanford Study.**
- Faculty Research Award: Top 10 "Most outstanding Researchers" in the field of Immunology and Microbiology (2018)
- Top 1000 Researchers of India award in 2023 by Career 360-2023
- Faculty Research Award: -2023 (Biotechnology)
- Fellow, Academy of Microbiological Sciences **(FAMI/FAMSc)** (2017)
- AMI-Alembic Award in Industrial Microbiology (2015)
- ASM-IUSSTF Indo-US Professorship Award in Microbiology by American Society of Microbiology

(2014)

- Selected as Scientist/ Project investigator and Participated in Southern Ocean Expedition (SOE-2011) (Ministry of Earth Sciences, Govt. of India). (January-March,2011)
- Danisco India Award in Probiotics & Enzyme Technology (2010)
- Awarded with NRF-DUT Post-Doctoral Fellowship in Enzyme Biotechnology supported by National Research Foundation and Durban University of Technology, South Africa (2008-2009)
- Stood First in the order of merit in University for Master of Science (Applied Microbiology & Biotechnology)
- Received "**Prof. S.B. Saksena, Award"** in life sciences for getting **first** position in university during M.Sc. in Applied Microbiology and Biotechnology (Consist of a cash prize and citation).

Publications [SCI Journals] (2011-2025) *Corresponding author

2025

1. Singha, L.P., Kumari, R, Singha, K.M. Pandey, P., **Shukla, P*.** (2025) Synergistic co-metabolism enhancing the crude oil degradation by *Acinetobacter oleivorans* DR1 and its metabolic potential. **Microbiology Spectrum (ASM)**, 0:e03023-24. https://doi.org/10.1128/spectrum.03023-24 **(Impact Factor: 3.7)**
2. Kumar, N., Vardhan, M., & **Shukla, P*.** (2025). A natural amylopectin based quaternized polymer as a promising biopolymer for efficient dewatering of *Chlorella sorokiniana* NKPS02. **Carbohydrate Polymers**, 124047. https://doi.org/10.1016/j.carbpol.2025.124047 **(Impact Factor: 12.5)**
3. Bhagat, N., Gupta, G. K., Minhas, A. K., Chhabra, D., & **Shukla, P*.** (2025). Artificial Neural Network-Multi-Objective Genetic Algorithm based optimization for the enhanced pigment accumulation in *Synechocystis* sp. PCC 6803. **BMC Biotechnology**, *25*, 23. https://doi.org/10.1186/s12896-025-00955-9 **(Impact Factor: 3.5)**
4. Kalwani, M., Minhas, A.K., **Shukla, P***, & Pabbi, S. (2025). Efficient nutrient sequestration and biomolecule production by *Chlorella Sorokiniana* MSP1 cultivated in industrial wastewater**. Journal of the Taiwan Institute of Chemical Engineers,** 105979. https://doi.org/10.1016/j.jtice.2025.105979 **(Impact Factor: 5.5)**
5. Rai, P., Pathania, R., Bhagat, N., Bongirwar, R., **Shukla, P***., & Srivastava, S. (2025). Current insights into molecular mechanisms of environmental stress tolerance in Cyanobacteria. **World Journal of Microbiology and Biotechnology**, *41*(2), 53. https://doi.org/10.1007/s11274-025-04260-7 **(Impact Factor: 4.0)**
6. Sharma A, Gupta, G.K., Chhabra, D.C, Pandey, P., **Shukla, P*.** (2025) Enhanced Indole-3-acetic acid production by *Enterobacter hormaechei* APSB3 through heuristic artificial neural network and particle swarm optimization, **Environmental Sustainability**, **(Impact Factor: 3.0)**
7. Rai, A. K., Yadav, M., Duary, R. K., & **Shukla, P*.** (2025). Gut Microbiota Modulation Through Dietary Approaches Targeting Better Health During Metabolic Disorders**. Molecular Nutrition & Food Research**, e70033. https://doi.org/10.1002/mnfr.70033 **(Impact Factor: 4.5)**
8. Gupta, G. K., Pandey, D., Liu, H., Kango, N*., & **Shukla, P*.** (2025). Sustainable technologies for bio-waste utilization and valorization: perspectives and challenges. **Biomass and Bioenergy**, 199, 107941. https://doi.org/10.1016/j.biombioe.2025.107941, **(Impact Factor: 5.8)**
9. Sharma, A., Das, N., Pandey, P*., & **Shukla, P***. (2025). Plant-microbiome responses under drought stress and their metabolite-mediated interactions towards enhanced crop resilience. **Current Plant Biology**, 100513. https://doi.org/10.1016/j.cpb.2025.100513 **(Impact Factor: 4.5)**
10. Srivastava, A., Chot, E., Gupta, V., Singhvi, N., & **Shukla, P**.* (2025). Stress genomics of the toxigenic cyanobacteria: environmental and biotechnological perspectives. **World Journal of Microbiology and Biotechnology**, 41(8), 1-19. https://doi.org/10.1007/s11274-025-04509-1 **(Impact Factor: 4.0)**
11. Gupta, G. K., Dixit, M., Chot, E., & **Shukla, P*.** (2025). Insights into Microbial Enzymatic Biodegradation of Plastics and Microplastics: Technological Updates. **ACS Environmental Au**. https://doi.org/10.1021/acsenvironau.5c00033 ; **(Impact Factor: 7.1)**

2024

12. Gupta, G. K., Sailwal, M., & **Shukla, P*.** (2024). Sustainable Nanotechnology Based Techniques for Mitigating the Pollutants from Pulp and Paper Industry. **ACS Omega**. https://doi.org/10.1021/acsomega.4c06022 **(Impact Factor: 3.7)**
13. Ranjan, K., Morais, J. A. V., Dixit, M., Nunes, L. C., Rodrigues, F. P., Muehlmann, L. A., **Shukla, P.** & Poças-Fonseca, M. J. (2024). Antifungal efficacy of photodynamic therapy on *Cryptococcus* and *Candida* species is enhanced by Streptomyces spp. extracts in vitro. ***Lasers in Medical Science***, 39(1), 255. https://doi.org/10.1007/s10103-024-04204-x **(Impact Factor: 2.1)**
14. Gupta, G. K., Kapoor, R. K., Chhabra, D., Bhardwaj, N. K., & **Shukla, P*.** (2024). Synergistic effect of cellulo-xylanolytic and laccase enzyme consortia for improved deinking of waste papers. **Bioresource Technology**, 131173. https://doi.org/10.1016/j.biortech.2024.131173 **(Impact Factor: 9.7)**
15. Tiwari, D., Kumar, N., Bongirwar, R., & **Shukla, P*.** (2024). Nutraceutical prospects of genetically engineered

cyanobacteria-technological updates and significance. **World Journal of Microbiology and Biotechnology**, *40*(9), 263. https://doi.org/10.1007/s11274-024-04064-1 **(Impact Factor: 4.0)**

16. Kalwani, M., Kumari, A., Rudra, S. G., Chhabra, D., Pabbi, S., & **Shukla, P*.** (2024). Application of ANN-MOGA for nutrient sequestration for wastewater remediation and production of polyunsaturated fatty acid (PUFA) by *Chlorella sorokiniana* MSP1. **Chemosphere**, 140835. https://doi.org/10.1016/j.chemosphere.2023.140835 **(Impact Factor: 8.8)**
17. Bongirwar, R., **Shukla, P*.** (2024). Engineering Regulatory Networks of Cyanobacteria. **Trends in Biotechnology**, **https://doi.org/10.1016/j.tibtech.2023.12.012 (Impact Factor: 17.3)**
18. Kumar, N., **Shukla, P*.** (2024). Microalgal multiomics-based approaches in bioremediation of hazardous contaminants. **Environmental Research**. https://doi.org/10.1016/j.envres.2024.118135 **(Impact Factor: 8.8)**
19. Sharma, A., Choudhary, P., Chakdar, H., **Shukla, P*** (2024) Molecular insights and omics-based understanding of plant–microbe interactions under drought stress. **World Journal of Microbiology and Biotechnology**,40, 42. https://doi.org/10.1007/s11274-023-03837-4 **(Impact Factor: 4.1)**
20. Tyagi, S., Kar, S., Srivastava, A., & Shukla, P. (2024). Protein Engineering in Cyanobacterial Biotechnology: Tools and Recent Updates. **Current Protein and Peptide Science**, *25*(2), 95 106. https://doi.org/10.2174/1389203724666230822100104 **(Impact Factor: 2.8)**
21. Srivastava, A., Thapa, S., Chakdar, H., Babele, P. K., & Shukla, P. (2024). Cyanobacterial myxoxanthophylls: biotechnological interventions and biological implications. **Critical Reviews in Biotechnology**, *44*(1), 63-77. https://doi.org/10.1080/07388551.2022.2117682 **(Impact Factor: 9.0)**

2023

22. Dixit, M. & **Shukla, P*** (2023) Multi-efficient endoglucanase from *Aspergillus niger* MPS25 and its potential applications in saccharification of wheat straw and waste paper deinking. **Chemosphere**. https://doi.org/10.1016/j.chemosphere.2022.137298 **(Impact Factor: 8.8)**
23. Usmani, Z., Gupta, V. K., Bajpai, V. K., & Shukla, P. (2023). Deciphering plant-microbiome interactions under abiotic stresses. **Environmental and Experimental Botany**, 105137. https://doi.org/10.1016/j.envexpbot.2022.105137 **(Impact Factor: 5.7)**
24. Dixit, M., Chhabra, D., & **Shukla, P*.** (2023). Optimization of endoglucanase-lipase-amylase enzyme consortium from *Thermomyces lanuginosus* VAPS25 using Multi-Objective Genetic Algorithm and their bio-deinking applications. **Bioresource Technology**, 128467. https://doi.org/10.1016/j.biortech.2022.128467 **(Impact Factor: 11.4)**
25. Jaiswal, S., Singh, D. K., & Shukla, P. (2023). Degradation effectiveness of hexachlorohexane (ϒ-HCH) by bacterial isolate *Bacillus cereus* SJPS-2, its gene annotation for bioremediation and comparison with *Pseudomonas putida* KT2440. **Environmental Pollution**, 318, 120867. **(Impact Factor: 8.9)**
26. Lu X, Hagemann M, Liu J, **Shukla P** and Tan X (2023) Editorial: Engineering microalgal chassis cells. **Frontiers in Microbiology**. 14:1237999. https://doi.org/10.3389/fmicb.2023.1237999 **(Impact Factor: 5.2)**
27. Dixit, M, Shukla, P. (2023) Analysis of endoglucanases production using metatranscriptomics and proteomics approach, **Advances in Protein Chemistry and Structural Biology**, Academic Press, https://doi.org/10.1016/bs.apcsb.2023.04.005 **(Impact Factor: 5.4)**
28. Bongirwar, R., & Shukla, P. (2023). Metabolic sink engineering in cyanobacteria: perspectives and applications. **Bioresource Technology**, 128974.https://doi.org/10.1016/j.biortech.2023.128974. (**Impact Factor: 11.4**)
29. Singhvi, N., Gupta, V., Singh, Y., & Shukla, P. (2023). Computational Approaches for the Structure-Based Identification of Novel Inhibitors Targeting Nucleoid-Associated Proteins in *Mycobacterium Tuberculosis*. **Molecular Biotechnology**, 1-10. https://doi.org/10.1007/s12033-023-00710-5 (**Impact Factor: 2.7**)
30. Kumari, R., Singha, L. P., & **Shukla, P*.** (2023). Biotechnological potential of microbial bio-surfactants, their significance, and diverse applications. **FEMS Microbes**, 4, xtad015-xtad015. https://doi.org/10.1093/femsmc/xtad015
31. Tyagi, S., Kar, S., Srivastava, A., & **Shukla, P*.** (2023). Protein Engineering in Cyanobacterial Biotechnology: Tools and Recent Updates. **Current Protein & Peptide Science**. http://dx.doi.org/10.2174/1389203724666230822100104 (**Impact Factor: 2.8**)
32. Kumar, N., & **Shukla, P*.** (2023). Microalgal-based bioremediation of emerging contaminants: Mechanisms and challenges. **Environmental Pollution**, 122591. https://doi.org/10.1016/j.envpol.2023.122591 (**Impact Factor: 8.9**)

2022

33. Dixit, M., Gupta, G.K., Pathak, P., Bhardwaj N.K., **Shukla, P*** (2022) An efficient endoglucanase and lipase enzyme consortium (ELEC) for deinking of old newspaper and ultrastructural analysis of deinked pulp. **Biomass Conversion and Biorefinery**. https://doi.org/10.1007/s13399-022-03310-6 **(Impact Factor: 4.050)**
34. Jaiswal, S., Singh, D.K., **Shukla, P*.** (2023) Lindane bioremediation by *Paenibacillus dendritiformis* SJPS-4, its

metabolic pathway analysis and functional gene annotation. **Environmental Technology & Innovation**, 27(102433), https://doi.org/10.1016/j.eti.2022.102433 **(Impact Factor: 7.758)**

35. Kumar, N., Kar, S., & Shukla, P. (2022). Role of regulatory pathways and multi-omics approaches for carbon capture and mitigation in Cyanobacteria. **Bioresource Technology**, 128104. https://doi.org/10.1016/j.biortech.2022.128104 **(Impact Factor: 11.889)**
36. Yadav, M., Sunita & **Shukla, P*.** (2022) Probiotic potential of *Weissella paramesenteroides* MYPS5.1 isolated from customary dairy products and its therapeutic application. **3 Biotech** 12, 9. https://doi.org/10.1007/s13205-021-03074-2 **(Impact Factor: 2.893)**
37. Chatterjee, G., Negi, S., Basu, S., Faintuch, J., O'Donovan, A., &**Shukla, P*.** (2022). Microbiome systems biology advancements for natural well-being. **Science of The Total Environment**, 155915. **(Impact Factor: 10.753)**
38. Kumar, N., Banerjee, C., Chang, J. S., & **Shukla, P*.** (2022). Valorization of wastewater through microalgae as a prospect for generation of biofuel and high-value products. **Journal of Cleaner Production**, 362: 132114. https://doi.org/10.1016/j.jclepro.2022.132114 **(Impact Factor: 11.072)**
39. Dixit, M., Gupta, G. K., Yadav, M., Chhabra, D., Kapoor, R. K., Pathak, P., Bhardwaj, NK & **Shukla, P*.** (2022). Improved deinking and biobleaching efficiency of enzyme consortium from *Thermomyces lanuginosus* VAPS25 using Genetic Algorithm-Artificial Neural Network based tools. **Bioresource Technology**, 126846.https://doi.org/10.1016/j.biortech.2022.126846 **(Impact Factor: 11.889)**
40. Pathania, R., Srivastava, A. Srivastava, S., **Shukla, P*.** (2022) Metabolic systems biology and multi-omics of cyanobacteria: perspectives and future directions, **Bioresource Technology**, 126007. https://doi.org/10.1016/j.biortech.2021.126007 . **(Impact Factor: 11.889)**
41. Chakdar, H., Thapa, S., Srivastava, A., **Shukla, P*.** (2022) Genomic and proteomic insights into the heavy metal bioremediation by cyanobacteria, **Journal of Hazardous Materials**, 127609, https://doi.org/10.1016/j.jhazmat.2021.127609. **(Impact Factor: 14.224)**
42. Kalwani, M., Chakdar, H., Srivastava, A., Pabbi, S., **Shukla, P.*** (2022) Effects of nanofertilizers on soil and plant-associated microbial communities: Emerging trends and perspectives. **Chemosphere**, https://doi.org/10.1016/j.chemosphere.2021.132107 **(Impact Factor: 8.943)**
43. Kumar, N., Banerjee C., Negi, S., **Shukla, P***. (2022) Microalgae harvesting techniques: updates and recent technological interventions. **Critical Reviews in Biotechnology**. 1-27.https://doi.org/10.1080/07388551.2022.2031089 **(Impact Factor: 9.062)**
44. Srivastava A, **Shukla P*.** (2022) Cyanobacterial Peptides: Metabolic Potential and Environmental Fate. **Protein and Peptide Letters**. https://doi.org/10.2174/0929866529666220314111105 **(Impact Factor: 1.927)**
45. Rastogi, M., Shrivastava, S., &**Shukla, P. (2021)** Bioprospecting of xylanase producing fungal strains: Multilocus phylogenetic analysis and enzyme activity profiling. **Journal of Basic Microbiology**, 62(2): 150-161 https://doi.org/10.1002/jobm.202100408 **(Impact Factor: 2. 650)**
46. Khangwal I, **Shukla, P*.** (2022) A comparative analysis for the production of xylooligosaccharides via enzymatic hydrolysis from sugarcane bagasse and coconut coir. **Indian Journal of Microbiology**. https://doi.org/10.1007/s12088-022-01010-3 **(Impact Factor-2.461)**
47. Srivastava, A, Thapa, S., Babele, P.; Chakdar, H, **Shukla, P*.** (2022) Cyanobacterial myxoxanthophylls: biotechnological interventions and biological implications. **Critical Reviews in Biotechnology**. https://doi.org/10.1080/07388551.2022.2117682 **(Impact Factor- 9.062)**
48. Singha, L. P., &**Shukla, P*.** (2022). Microbiome engineering for bioremediation of emerging pollutants. **Bioprocess and Biosystems Engineering**, 1-17.https://doi.org/10.1007/s00449-022-02777-x **(Impact Factor-3.434)**

2021

49. Srivastava, A., **Shukla, P*.** (2021) Emerging tools and strategies in cyanobacterial omics. **Trends in Biotechnology**. https://doi.org/10.1016/j.tibtech.2021.05.004 **(Impact Factor:21.942).**
50. Kumar, P., Baig, M.K., Choudhury, K., Cucchiarini M., Madry, H and **Shukla, P*.** (2021) Tissue regeneration through cyber-physical systems and microbots. **Advanced Functional Materials**. https://doi.org/10.1002/adfm.202009663 **(Impact Factor:21.870).**
51. Sharma, B., & **Shukla, P.*** (2021). Lead bioaccumulation mediated by *Bacillus cereus* BPS-9 from an industrial waste contaminated site encoding heavy metal resistant genes and their transporters. **Journal of Hazardous Materials**, 401,123285. https://doi.org/10.1016/j.jhazmat.2020 **(Impact Factor: 14.224).**
52. Sharma, B. &**Shukla, P.*** (2021). A comparative analysis of heavy metal bioaccumulation and functional gene annotation towards multiple metal resistant potential by *Ochrobactrum intermedium* BPS-20 and *Ochrobactrum ciceri* BPS-26. **Bioresource Technology** 320:124330., https://doi.org/10.1016/j.biortech.2020.124330 **(Impact Factor: 11.889)**
53. Ghosh A, Chandra A, Dhar A, **Shukla, P***, Baishya D (2021). Multi-efficient thermostable endoxylanase from *Bacillus velezensis* AG20 and its production of xylooligosaccharides as efficient prebiotics with anticancer activity. **Process Biochemistry**. https://doi.org/10.1016/j.procbio.2021.06.011 **(Impact Factor: 4.885)**
54. Khangwal, I., Chhabra, D. & **Shukla, P*.** (2021). Multi-Objective Optimization Through Machine Learning Modeling for Production of Xylooligosaccharides from Alkali-Pretreated Corn-Cob Xylan Via Enzymatic Hydrolysis. **Indian**

Journal of Microbiology. https://doi.org/10.1007/s12088-021-00970-2. (Impact Factor-2.461)

55. Chaudhary, T., Yadav, D., Chhabra, D., Gera, R., **Shukla, P.*** (2021). Low-cost media engineering for phosphate and IAA production by *Kosakonia pseudosacchari* TCPS-4 using Multi-objective Genetic Algorithm (MOGA) statistical tool. **3 Biotech**. https://doi.org/10.1007/s13205-021-02690-2 **(Impact Factor: 2.893)**
56. Saini, D. K., Rai, A., Devi, A., Pabbi, S., Chhabra, D., Chang, J. S., & **Shukla, P*.** (2021). A multi-objective hybrid machine learning approach-based optimization for enhanced biomass and bioactive phycobiliproteins production in *Nostoc* sp. CCC-403. **Bioresource Technology**,329, 124908. https://doi.org/10.1016/j.biortech.2021.124908 **(Impact Factor: 11.889)**
57. Dixit, M., Panchal, K., Pandey D., Labrou, N.E., **Shukla, P*.** (2021). Robotics for enzyme technology: innovations and technological perspectives. **Applied Microbiology and Biotechnology**. https://doi.org/10.1007/s00253-021-11302-1 **(Impact Factor: 5.560).**
58. Sunita, Singh, Y., Beamer, G, Sun, X. &**Shukla, P*.** (2021). Recent developments in systems biology and genetic engineering towards design of vaccines for TB, **Critical Reviews in Biotechnology**. https://doi.org/10.1080/07388551.2021.1951649 **(Impact factor- 9.062)**
59. Tyagi S., Kumar R., Kumar V., Won S.Y.*, **Shukla, P.*** (2021). Engineering disease resistant plants through CRISPR-Cas9 technology. **GM Crops & Food**, 12(1), 125-144. https://doi.org/10.1080/21645698.2020.1831729. **(Impact Factor: 3.118).**
60. Chaudhary, T., Gera, R., **Shukla, P.*** (2021). Emerging molecular tools for engineering phytomicrobiome. **Indian Journal of Microbiology**, (61)116–124. https://doi.org/10.1007/s12088-020-00915-1 **(Impact Factor-2.461)**
61. Mandeep, Liu, H., & Shukla, P. (2021). Synthetic Biology and Biocomputational Approaches for Improving Microbial Endoglucanases toward Their Innovative Applications. **ACS Omega**: 6 (9), 6055-6063, https://doi.org/10.1021/acsomega.0c05744 **(Impact Factor: 4.132)**
62. Sharma, M., Bhat, R., Usmani, Z., McClements, D. J., **Shukla, P.**, Raghavendra, V. B., & Gupta, V. K. (2021). Bio-Based Formulations for Sustainable Applications in Agri-Food-Pharma. **Biomolecules** 11(5), 768; https://doi.org/10.3390/biom11050768 **(Impact Factor: 6.064)**
63. Chandra, H., Sharma, K.K., Tuovinen, O.H., Sun, X., **Shukla, P*.** (2021). Pathobionts: mechanisms of survival, expansion, and interaction with host with a focus on *Clostridioides difficile*. **Gut Microbes**, https://doi.org/10.1080/19490976.2021.1979882 **(Impact Factor- 10.245)**
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38. Kumar, N, Kar, S., Srivastava, A, Banerjee, C., **Shukla, P.** (2023) In Progress in Biochemistry and Biotechnology, Microbial Bioprocesses, Academic Press, Pages 67-81, ISBN 9780323953320, https://doi.org/10.1016/B978-0-323-95332-0.00008-9.
39. Gupta, G. K., Dixit, M., Pandey, D., Kapoor, R. K., Kango, N., & **Shukla, P.** (2023). Microbial enzyme bioprocesses in biobleaching of pulp and paper: technological updates. In *Microbial Bioprocesses* (pp. 319-337). Academic Press. https://doi.org/10.1016/B978-0-323-95332-0.00009-0
40. Chaudhary, T., & **Shukla, P.** (2023). Bioinoculants development for sustainable agriculture by innovative optimization processes: a future roadmap to commercialization. In Microbial Bioprocesses (pp. 107-119). Academic Press. https://doi.org/10.1016/B978-0-323-95332-0.00009-0
41. Gupta, G.K., Pathak, G., **Shukla, P.,** Kapoor, RK (2023) Bioresources, environmental aspects, and patent scenario for biobleaching in pulp and paper industry, In Progress in Biochemistry and Biotechnology, Microbial Bioprocesses, Academic Press, Pages 299-318, https://doi.org/10.1016/B978-0-323-95332-0.00004-1
42. Saini, D. K., Roy, D., **Shukla, P.,** & Pabbi, S. (2024). Algal Biorefinery: An Integrated Approach for Biofuels and Bio Commodities Production Coupled with Environmental Sustainability. In *Algal Biotechnology* (pp. 192-208). CRC Press. eBook ISBN9781003219194
43. Sharma, A., **Shukla, P.,** & Pandey, P. (2025). Significance of Plant Growth-Promoting Rhizobacteria in Alleviating Drought Stress in Crop Plants Under a Changing Climate for Sustainable Agricultural Production. In Microorganisms Resilience to Climate Change (pp. 81-96). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-96-3748-5_5

Edited Books

1. **Pratyoosh Shukla (2023)** Microbial Bioprocesses: Applications and Perspectives, Elsevier Science, USA. ISBN: 9780323953320 https://www.elsevier.com/books/microbial-bioprocesses/shukla/978-0-323-95332-0
2. **Pratyoosh Shukla (2020)** Microbial Enzymes and Biotechniques: Interdisciplinary Perspectives, Springer Nature Singapore Pte Ltd. eBook ISBN 978-981-15-6895-4; Hardcover ISBN: 978-981-15-6894-7. https://www.springer.com/gp/book/9789811568947
3. **Pratyoosh Shukla (2019)** Applied Microbiology and Bioengineering, Academic Press, Elsevier, USA. ISBN: 9780128154076. https://www.elsevier.com/books/applied-microbiology-and-bioengineering/shukla/978-0-12-815407-6#
4. **Pratyoosh Shukla (2017)** Recent advances in Applied Microbiology (Springer Nature). ISBN 978-981- 10-5275-0. http://www.springer.com/us/book/9789811052743.
5. **Pratyoosh Shukla (2016)** Microbial Biotechnology: An Interdisciplinary Approach. CRC Press, Taylor and Francis Group. United States ISBN 9781498756778. (URL: https://www.crcpress.com/Microbial-_Biotechnology-An-Interdisciplinary-Approach/Shukla/p/book/9781498756778]
6. **Pratyoosh Shukla (2015)** Frontier Discoveries and Innovations in Interdisciplinary Microbiology. Springer-Verlag Berlin Heidelberg. ISBN 978-81-322-2610-9 (eBook); ISBN 978-81-322-2609-3 [URL: http://www.springer.com/us/book/9788132226093]
7. **Pratyoosh Shukla,** MVK Karthik **(2015)** Computational Approaches in *Chlamydomonas reinhardtii* for Effectual Bio-hydrogen Production. Springer Briefs in Systems Biology, Springer-Verlag Berlin Heidelberg. ISBN 978-81-322-2383-2 (eBook); ISBN 978-81-322-2382-5(Hardcover)
(URL: http://www.springer.com/in/book/9788132223825#aboutBook]
8. **Pratyoosh Shukla** and Pletschke, Brett I. (Eds.) (2013) Advances in Enzyme Biotechnology, Springer- Verlag Berlin Heidelberg. ISBN 978-81-322-1094-8 (eBook); ISBN 978-81-322-1093-1(Softcover)
[URL: http://link.springer.com/book/10.1007%2F978-81-322-1094-8]
9. MVK Karthik, **Pratyoosh Shukla** (2012). Computational Strategies Towards Improved Protein Function Prophecy of Xylanases from *Thermomyces lanuginosus* (Springer Briefs in Systems Biology) Springer; 2012 Ed. [ISBN- 978-1-4614-4722-1] DOI:10.1007/978-1-4614-4723-8 [URL: http://link.springer.com/book/10.1007%2F978-1-4614-4723-8]

Journal Special Issue/ Conference Proceedings:

1. **Shukla P.**, R.C. Kuhad, T. Satyanarayana (2011). Proceedings of the 51st Annual International Conference of the Association of Microbiologists of India – Recent Trends in Cross-disciplinary Microbiology: Avenues and Challenges. 3Biotech (Springer), 1(4):187-272. (10articles) **(IF 3.44)** http://link.springer.com/journal/13205/1/4/page/1

2. **Shukla, P.**, Bajpai, VK, Usmani, Z., Gupta, VK Deciphering plant-microbiome interactions under abiotic stresses, Environmental and Experimental Botany **(IF 6.02)** https://www.journals.elsevier.com/environmental-and-experimental-botany/call-for-papers/deciphering-plant-microbiome-interactions-under-abiotic-stresses
3. Sharma, M.; Bhat, R.; Usmani, Z.; McClements, D.J.; **Shukla, P**.; Raghavendra, V.B.; Gupta, V.K. Biomolecules; Special Issue "Bioactive Formulations in Agri-Food-Pharma: Source and Applications". Biomolecules (MDPI), https://www.mdpi.com/journal/biomolecules/special_issues/bioactive_formulations_agri_food_pharma **(IF 6.06)**
4. Gaur, V. K., Patel, A. & **Shukla, P**; special issue on "Microbial cell bioprocessing and biomanufacturing". BMC Biotechnology (Springer). https://www.biomedcentral.com/collections/mcbb **(IF 3.7)**
5. Brunet, C., Lopez-Arredondo, D., **Shukla, P.** & Hussein Znad; special issue on "Microalgae and agriculture". Scientific Reports. https://www.nature.com/collections/faagahfhjg **(IF 3.9)**

Expert Panel of R&D projects (Organization name, country and link)

S. No.	Organization Name	Country	Link/ Website
1.	Department of Biotechnology (DBT), Govt. of India	India	http://dbtindia.gov.in/
2.	SERB, Science and Engineering Research Board, India	India	www.serb.gov.in
3.	BIRAC, DBT, INDIA	India	www.birac.nic.in
4.	BARD - Binational Agricultural Research and Development Fund US-Israel	Israel	https://www.bard-isus.com/
5.	National Research Foundation, South Africa	South Africa	https://www.nrf.ac.za/
6.	Research Committee of the University "Foroltalico" of Rome, Italy	Italy	http://www.uniroma4.it/
7.	Chilean National Science and Technology Commission (CONICYT - Chile)	Chile	http://www.conicyt.cl
8.	Newton Fund, UK-Malaysia Joint Partnership on Non-Communicable Diseases, UKRI MRC	UK	www.mrc.ukri.org
9.	CQDM - Consortium de recherchebiopharmaceutique, Canada	Canada	https://cqdm.org/en/
10.	Netherlands Organisation for Scientific Research (NWO)	Netherlands	http://www.isaac.nwo.nl/
11.	The research council (TRC)	Oman	https://www.trc.gov.om/trcweb/
12.	Indo-French Centre for the Promotion of Advanced Research, DST, India	India & France	http://www.cefipra.org/#footer
13.	Ministry of Science &Technology The State of Israel (MOST)- Israel	Israel	most.gov.il
14.	National Science Centre, Poland	Poland	http://www.ncn.gov.pl
15.	The Italian Ministry for universities and research (MUR)	Italy	mur.gov.it
16.	Agency for Science, Technology and Research (A*STAR), Singapore	Singapore	https://www.a-star.edu.sg/
17.	Czech Academy of Sciences (CAS)	Czech Republic	https://www.avcr.cz/en/
18.	Czech Science Foundation	Czech Republic	www.gacr.cz/en
19.	Science Fund of the Republic of Serbia (SSF)	Republic of Serbia	https://fondzanauku.gov.rs/?lang=en
20.	Swiss National Science Foundation (SNSF)	Switzerland	http://www.snsf.ch/

Mentoring of Post-Doctoral Students: 04 Guided

S. No.	Name of Student & Title of Project	Funding Agency & Total Budget	Funding amount	Duration

1.	**Dr. L. Paikhomba Singha** SERB-National Post-Doctoral Fellow (SERB-NPDF) Title of Project: "Metabolomics and transcriptomics-based analysis for congenial syncom and development of EDS (effective delivery system) for the in-situ rhizoremediation of crude oil". (PDF/2021/000223) (Mentor)	SERB, DST, Govt. of India	22 Lakhs	2 years (2022-2024)
2	**Dr. Niwas Kumar** SERB-National Post-Doctoral Fellow (SERB-NPDF) Title of Project: 'Microbial derived biopolymers for harvesting and valorization of microalgal biomass as sustainable feedstock for neutraceuticals and bioactive compounds'' (PDF/2022/000561) (Mentor)	SERB, DST, Govt. of India	**21. 31** Lakhs	2 years (2022-2024)
3	**Dr. Megha Sailwal** **Raja Jwala Prasad- Post Doctoral Fellow (RJP-PDF)** Title of Project: 'Algal biomass valorization and elucidating the stress genomics of *Synechocystis* sp. PCC 6803 and *Synechococcus* sp. PCC 11901'	Raja Jwala Prasad- Post Doctoral Fellow (RJP-PDF)		1 year (2024-2025)
4	**Dr. Eetika Chot** **Raja Jwala Prasad- Post Doctoral Fellow (RJP-PDF)** Title of Project: 'Algal biomass valorization and elucidating the stress genomics of *Synechocystis* sp. PCC 6803 and *Synechococcus* sp. PCC 11901'			

Ph.D. Guidance: 25 (Twenty-five) AWARDED: 20, ONGOING: 05

MEMBERSHIP OF SCIENTIFIC OR PROFESSIONAL BODIES

- Life Member, "Indian Science Congress Association (ISCA)".
- Life Member, "Indian Society for Technical Education (ISTE)"
- Life Member, Mycological Society of India (MSI)
- Member, Asian Federation of Biotechnology (AFoB)
- Life Member, Biotech Research Society of India (BRSI)
- Life Member, ADNAT, CCMB, Hyderabad.
- Member, American Society on Microbiology (ASM)
- Life Member, "Association of Microbiologists of India (AMI)".
- Member, "European Federation of Biotechnology (EFB)"
- Member, The GenomeWeb Intelligence Network genomics tools and technology. (http://www.genomeweb.com)

MEMBER AS EDITORIAL BOARD/EDITOR OF JOURNALS/ SCIENTIFIC SOCIETIES

- Editor, Nature Scientific Reports
- Associate Editor, Frontiers in Microbiology,
- Review Editor, Frontiers in Bioengineering and Biotechnology, Frontiers in Environmental Science
- Guest Editor, Biomolecules Special Issue "Bioactive Formulations in Agri-Food-Pharma: Source and Applications" https://www.mdpi.com/journal/biomolecules/special_issues/bioactive_formulations_agri_food_pharma
- Associate Editor, BMC Microbiology,
- Associate Editor (3Biotech-Springer), Academic Editor (PLOS One)
- Editorial Board Member, The Open Microalgae Biotechnology (Bentham Science)
- Editor, Indian Journal of Microbiology (Springer),
- Guest Editor, Current Protein and Peptide Science (Bentham Science)
- Editorial Board Member, Protein and Peptide Letters (Bentham Science)
- Editor-in-Chief, Journal of Microbiology, Internet Scientific Publishers, USA (2007-2009)
- Secretary, Association of Microbiologists of India, Ranchi Unit, Jharkhand Chapter (2007-2011).,
- President, Association of Microbiologists of India, Rohtak Unit.,
- Member, National Executive Council of Association of Microbiologists of India. (2007-2014)
- Former General Secretary, Association of Microbiologists of India (AMI) (2014-2020)
- Member, National Executive Council of Mycological Society of India (MSI)

R & D PROJECTS/ GIAN Courses [As Principal Investigator (PI)/Co-Investigator (Co-PI)]

S. No.	Title of Project	Funding Agency & Total Budget	Sanction date/Year	Duration
1.	'Development of probes for early detection of microorganisms responsible for food spoilage during food processing and preservation'. (45/MFPI/R&D/2002-IV) (As Co-PI)	Ministry of Food Processing & Industries, Govt of India Rs. 80.00 Lakhs (INR)	15-02-2006	2 years (2006-2008)
2.	Genetic modification of hydrogen producing algae (As Coordinator)	Institute Sponsored R & D Project (Rs. 3Lakhs)	July 2009	3 Years 2009-2011
3.	Innovative Project on Bio-hydrogen production from microalgae (PI)	BIT Mesra, Ranchi (Rs. 3.00 Lakhs)	August, 2010	November, 2012 (3.00 Lakhs)
4.	Cloning, expression and Characterization of a novel xylanase from *Thermomyces lanuginosus* and improvement of effectual bioprocess'(PI) (Reg. No. SERC/LS-228/2012 dated 06/08/12)	DST-FAST TRACK Govt. of India (Rs. 23.46 Lakhs)	August 2012	2012-2015 (3 Years)
5.	Proteomic analysis and lipid profiling of *Chlamydomonas reinhardti* and its relevance towards bio-fuel production (PI)	UGC, New Delhi Rs. 9,80,800/-	22, March,2013 (01-04-2013)	2013-2016 (3 Years)
6.	"TREAT-AFTER-TOO-Targeting elimination of antineoplastic compounds in hospital waste waters: novel frontiers in sustainable treatment". (As Co-PI) (BT/IN/INNO-INDIGO/26/MKM/2015-16)	DBT, Govt. of India-INNOINDIGO Rs. 209.168 Lakhs (Rs. 2 Crore Nine Lakhs)	Nov 26, 2015	2015-2018 (3 Years)
7.	Site Directed Mutagenesis of UbiA gene in *Agrobacterium tumefaciens* to enhance CoQ10 Yield [BT/PR13569/BBE/117/106/2015] (As Co-PI)	DBT, Govt. of India Rs. 40 Lakhs (Rs. Forty Lakhs)	2016	2016-2018 (2 Years)
8.	Process development for the cost-effective production of fungal endoglucanase, lipase and amylase for deinking of newsprints and mixed office waste papers (BT/PR27437/BCE/8/1433/2018) (PI & Coordinator)	DBT, Govt. of India Rs. 62.91 Lakhs (Rs. Sixty-Two Lakhs Ninety-one thousand)	August, 2018	2018-2021 (3 Years)
9.	Transcriptional engineering of a fast-growing marine cyanobacterium *Synechococcus* sp. PCC 11901 towards efficient metabolites production **(File Number: CRG/2021/001206)** (PI)	Core Research Grant, SERB-DST, Govt. of India Rs. 101 Lakhs (Rs. One Crore, One Lakh only)	2022	2025
10.	Functional characterization of universal stress-responsive genes in the model cyanobacterium *Synechocystis* sp. PCC 6803. (PI)	Institute of Eminence (IoE) Grant, BHU, Varanasi Rs. 18 Lakhs (Rs. Eighteen Lakhs)	2022	2024
GIAN Programmes				
11.	Current challenges in commercial production of cellulosic ethanol (As Course Coordinator)	GIAN, MHRD, Govt. of India (Rs. 5.44 Lakhs)	2018	8-13 October, 2018
12.	Enzymatic protein hydrolysates and material behaviour of its fractions in human nutrition (As Course Coordinator)	GIAN, MHRD, Govt. of India Rs. 5.44 Lakhs	2018	19-24 November, 2018
13.	Structural biology techniques and its role in drug discovery (As Course Coordinator)	GIAN, MHRD, Govt. of India Rs. 6.64 Lakhs	2025	17-21 March 2025
14.	Models and algorithms for omics Data analysis (As Course Coordinator)	GIAN, MHRD, Govt. of India Rs. 6.64 Lakhs	2025	2-6 June 2025
INFRASTRUCTURAL GRANT (DEPARTMENTAL/INSTITUTIONAL PROJECTS)				
15.	"Fund for Improvement of S&T infrastructure in universities & higher educational institutions (FIST-Level-B)" (Grant No. SR/FST/LS-I/2024/1375) **SCHOOL OF BIOTECHNOLOGY, INSTITTE OF SCIENCE, BHU, VARANASI** **[Term as Coordinator- 2024- 2025]**	Department of Science and Technology, Govt. of India Rs. 120 Lakh (Rs. One Crore Twenty Lakhs)	2024	2024-2029 (5 Years)

15.	"Fund for Improvement of S&T infrastructure in universities &higher educational institutions (FIST-Level-I)" (Grant No. 1196SR/FST/LS-I/2017/4). **DEPARTMENT OF MICROBIOLOGY, M.D. UNIVERSITY, ROHTAK, HARYANA** **[Term as Coordinator- 2018- 2021]**	Department of Science and Technology, Govt. of India Rs. 90 Lakhs (Rs. Ninety Lakhs)	2018	2018-2023 (5 Years)
16.	Erasmus+ Capacity Building in Higher Education - ''ENHANCING FEMALE ENTREPRENEURSHIP IN INDIA (ENPRENDIA)'' **[Partner Institute Coordinator]**	European Union (EU) 9,81,676 Euros [Rs. 8,20,46,717)	February, 2018	2018-2021 (3 Years)