TECHNOLOGY TRANSFER TO INDUSTRY: 02

1. **Title**: A multipurpose low-cost portable UV-C sanitization cabinet for home and office use.

   Product Name: UV-C sterilization cabinet (Viralyser)

   Technology Transferred: Garg Telecom Corporation, 38, Monereco Industrial Estate, Prayagraj.

2. **Title**: Hand Gloves Removing Device

   Technology Transferred: Caremont LLP, Bangalore

   Product Name: Hand Gloves Removing Device

TECHNOLOGY TRANSFER AS PART OF SOCIAL RESPONSIBILITY: 02

1. **Title**: A low cost and disposable face shield

   Product Name: Viro Shield

   Transferred/Donated: Frontline corona warriors, Police and Local administration, Medical personnel and various stakeholders

2. **Title**: A mobile application

   Transferred To: Prayagraj District Administration

PATENTS GRANTED:03

1. 1. Method of simultaneous detection of *E. coli* and *Salmonella* species by gold nanoparticle based lateral flow immunoassay. **Patent Num: 370213;** Application No: 3215/Del/2015
2. A composition for inhibiting the growth of fungi; Application No.: 202211031283; **Patent No**.: 521707
3. A topical composition for treating bacterial infections; Application No: 202111009001; **Patent No**.: 568236

PATENTS FILED:03

1. An improved anthropometrically designed face shield and a process thereof. Application No: 202011019565.
2. Hand gloves removing device, May 05, 2020, Application No: 202011019189.
3. A multipurpose low- c o s t portable UV-C sanitization cabinet for home and office use. Application No: 202011018858.

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1. AMRIT (Assessment, Monitoring, Reporting and Intelligent Tracking), 2020; 6951/2020-CO/SW

ONGOING RESEARCH PROJECTS:06

Sl.No	Title	FundingAgency	Amount [Rs. Approx]	Period	PI/Co-PI
1.	Investigating the role of nitric oxide and indole acetic acid releasing chitosan nanoparticles induced alleviation mechanisms of chromium and metsulfuron methyl toxicity in rice and tomato	Council of Scientific and Industrial Research (CSIR); Govt. of India	25 Lakhs	03 Years	PI
2.	Design and Innovation Centre (Spoke)	Ministry of Education (MoE); Govt. of India	100 Lakhs	06 Years	PI
3	Delineating the role of epigenetic modifications over Socs3 promoter region in nanosized Titanium dioxide sensitized airways of murine model	Department of Science and Technology, Govt. of India	31 Lakhs	03 Years	Mentor
4	Establishment of Project Mentoring in Govt. Schools of Uttar Pradesh	Samagra Shiksha, Govt. of Uttar Pradesh	30 Lakhs	03 Years	PI
5.	Redefining Innovative Strategies in Education: A Journey Towards Saksham Bharat	Navodaya Vidyalaya Samiti, Ministry of Education, Govt. of India	25 lakh	01 Year	PI
6	Gyaan Shakti: Empowering Students through Emerging Technologies and Aptitude Testing	Ministry of Education, Govt. of India	100 Lakhs	01 Year	PI

COMPLETED RESEARCH PROJECTS:15

S. No	Title	FundingAgency	Amount [Rs. Approx]	Period	PI/Co-PI
1	Studies on nanoparticles (FeO2 and CuO NPS) mediated toxicity, tolerance mechanisms and their toxicity management in some susceptible and tolerant rice (*Oryza sativa* L.) varieties	Council of Scientific and Industrial Research (CSIR); Govt. of India	35 Lakhs	04 Years	PI
2	GIS based mapping of microbial diversity across Ganges for ecosystem services	National Mission for Clean Ganga (NMCG), Govt. of India	55 Lakhs	02 Years	PI
3	Bio-restoration technology based on the management of plant microbe soil interactions for the restoration of degraded ecosystems	Department of Biotechnology (DBT); Govt. of India	7.01 Lakhs	01 Year	PI
4	Harnessing PGPRs from Indo Gangetic Plain Region of Uttar Pradesh for Growth Promotion and Disease Suppression in Rice and Pigeonpea	Department of Biotechnology (DBT); Govt. of India	39.39 Lakhs	03 Years	PI
5	Microbial profiling in Gangetic River system and development of a gold nanoparticle based multiplex lateral flow immunoassay for bacterial detection	University Grants Commission; Govt. of India	8.43 Lakhs	03 Years	PI
6	Environment restoration using plant microbe interaction: Rhizoremediation.	Ministry of Environment and Forest, Govt. of India (GBPIHED) ; Govt. of India	4.95 Lakhs	03 Years	PI
7	Assessment of Bacterial diversity of Gangetic River system of Uttarakhand using molecular approaches.	Department of Science and Technology (UCOST), Govt. of India.	3.57 Lakhs	02 Years	PI
8	Microbial Diversity: Indicator of pollution in Gangetic River system of Uttarakhand	Department of Science and Technology (UCOST), Govt. of India.	3.12 Lakhs	01 Year	PI

9	Startup Centre	Department of Science and Technology (DST) and Ministry Education (MOE); Govt. of India	50.00 lakhs	03 Years	PI
10	Delineating the role of nano-herbal composites in ergosterol biosynthesis inhibition in dermatophytes.	Department of Science and Technology (DST); Govt. of India	25.00 Lakhs	03 Years	Mentor
11	Study to investigate the therapeutic efficacy of CD5 blocking in treatment of T cell lymphoblastic leukemia	Department of Biotechnology (DBT); Govt. of India	24.69 Lakhs	03 Years	Co-PI
12	Study of role of lactone signalling and alginate production on neutrophil interaction, apoptosis, and subsequent macrophage mediated phagocytosis against *P. aeruginosa*Biofilm associated infection	SERB, Department of Science and Technology (DST); Govt. of India	41.40 Lakhs	03 Years	Co-PI
13	Identification of novel epigenetic biomarkers through next generation sequencing technologies towards developing a multiplex methylight assay for early diagnosis of epithelial ovarian cancer	Indian Council of Medical Research (ICMR); Govt. of India	30.00 Lakhs	03 Years	Co-PI
14	Utilizing rhizosphere technology for bio restoration of degraded Land	TEQIP -II	5 Lakhs	15 Months	PI
15	Study of rhizospheric interactions for sustainable agriculture	TEQIP -II	1.12 lakhs	01 Year	PI

COMPLETED TESTING & CONSULTANCY PROJECTS:01

Sl. No	Title	Funding Agency	Period	PI/Co-PI
1.	Enhanced natural attenuation for in situ Nallah treatment of Jhusi area, Prayagraj	State Mission for Clean Ganga; Govt. of India (23 laks)	01 Year	PI

COMPLETED INTERNALLY FUNDED PROJECT UNDERTAKEN: 01

Sl.No.	Project Title	Funding Agency	Status
1	Rhizosphere Technology: An Approach for Bioremediation	MNNIT, Allahabad	Completed

GIAN (GLOBAL INITIATIVE OF ACADEMIC NETWORKS) ORGANISED AS CONVENER/PRINCIPAL COORDINATOR: 04

S.No.	Title	Funding Agency	Date	As
1	Signalling Cross-talk During Plant Abiotic Stress Phenomena and Ameliorative Potential Through Priming Technologies	Ministry of Education (MoE), Government of India	December 9-13, 2023	Principal Coordinator
2	Interface between Nanoparticles and Living Systems: Ethical and Translational Dimension	Ministry of Education (MoE), Government of India	July 15-26, 2019	Principal Coordinator
3	Emerging Bio photonics Solutions for Disease Diagnosis	Ministry of Education (MoE), Government of India	April 1-12, 2019	Principal Coordinator
4	Genomics, Personalized medicine and Ethics	Ministry of Education (MoE), Government of India	July 31-August 11, 2017	Principal Coordinator

AICTE Training and Learning (ATAL) Academy COURSE ORGANISED AS PRINCIPAL COORDINATOR: 01

S.No.	Title	Funding Agency	Date	As
1	Rhizopsheric Engineering: Revisiting the Microbe Plant Synergy to mitigate Plant Nano Toxicology	All India Council of Technical Education	Jan 24-28, 2022	Principal Coordinator

CONFERENCE ORGANISED:09

S.No.	Title	Funding Agency	Date	As
1	BioSangam 2024: Bio-Technological Intervention for Health, Agriculture and Circular Economy *International Conference*	• Council of Scientific and Industrial Research (CSIR)	February 23-25,2020	Coordinator
2	BioSangam 2022 Emerging Trends in Biotechnology *International Conference*	• Council of Scientific and Industrial Research (CSIR)	March 10-12, 2022	Organizing Secretary
3	BioSangam 2020 :Biotechnological Interventions for Societal Development *International Conference*	• Council of Scientific and Industrial Research (CSIR) • Science and Engineering Research Board (SERB DST), Govt. of India • TEQIP III	February 21-23,2020	Organizing Secretary
4	BioSangam 2018: Innovations and Translational Dimensions *International Conference*	• Council of Scientific and Industrial Research (CSIR) • Department of Science and Technology (DST) • TEQIP III	March 9-11, 2018	Chairman
5	BioSangam 2016:Translational Biotechnology *International Conference*	Various Govt. Agencies	February 4-6, 2016	Coordinator
6	Mechanics and Manufacturing of Multifunctional Materials and Structures *International Conference*	• TEQIP-II	December 27-29, 2014	Treasurer
7	BioSangam 2013: Health, Environment and Industrial Biotechnology *International Conference*	• Indian council of Medical Research (ICMR) • Council of Scientific and Industrial Research • Defense Research and Development Organization • Indian National Science Academy • Board of Research in Nuclear Medicine	November 21-23, 2013	Convener
8	Bioprospecting: Access for	• Department of Biotechnology (DBT)	February 19-	Organizing

	Sustainable Development *National Conference*	• Indian council of Medical Research (ICMR) • Council of Scientific and Industrial Research (CSIR) • Department of Science and Technology (DST) • Ministry of Environment and Forest	20, 2010	Secretary
9	Microbial Diversity: Avenues and Applications *National Conference*	• Council of Scientific and Industrial Research (CSIR) • Department of Biotechnology(DBT) • Indian National Science Academy Uttarakhand Council for Science and Technology (UCOST) – SBS PGI Dehradun	March17-18, 2007	Organizing Secretary

SHORT TERM TRAINING COURSE / WORKSHOP ORGANIZED AS CONVENER / COORDINATOR: 12

S. No.	Title	Funding	Date
1	Biotechnological interventions for societal development	TEQIP II and R&C, MNNIT Allahabad	March 21-23, 2017
2	Advances in Biosciences and Bioengineering	TEQIP II	October 19-25, 2016
3	Current Advances in Biotechnology	TEQIP II	October 13-19, 2016
4	Motivational Science Learning Camp	DST, Govt. of India	February 17-21,2016
5	DNA Sequencing: Applications in Diagnostics and Health Care Innovation"	Self-Financed	December 8-14, 2015
6	Flow Cytometry: Application in Research, Diagnostics and Health Care Innovation	Self-Financed	December 15-21, 2015
7	Biotechnology, IPR and Entrepreneurship	Self-Financed	January 14-18, 2015
8	Biotechnology, Health and Diagnostics	Self-Financed	January 24-28, 2015
9	Human Health and Environmental Sustainability	Self-Financed	June 4- 8, 2013
10	Frontiers in Biotechnology	Self-Financed	May28 –June 1, 2013
Innovation Events organized as a Coordinator, Spoke			
11	DIC meet of all spokes (MNNIT Allahabad, IIIT Allahabad, Allahabad University) of IIT BHU and BHU Varanasi was organized under the scheme "National Initiative for Design Innovation" at MNNIT Allahabad	Ministry of Human Resource Development(MHRD)	February 07, 2020
12	One day exhibition on the products and prototypes	Ministry of Education (MoE)	November 26, 2019

Publications:

1. Barthwal, H., Sharma, C., Kumar, V., Rajput, V., Naik, B., **Shivesh Sharma** ... & Kumar, V. (2025). Bacopa monnieri, a wonder plant in the backyard: Emphasizing the role of the microbiome in increasing its potential. **Phytomedicine Plus**, 100865. **[IF:3.45]**
2. Chaudhary, R., Sharma, C., Kumar, V., Rajput, V., Naik, B., Prasad, R., **Shivesh Sharma** and Kumar, V., 2025. Millet biofortification for enhanced iron content: Roadmap for combating hidden hunger. **Journal of Agriculture and Food Research**,**[IF: 4.8]**
3. Kandhol, N., Singh, V. P., Pandey, **Shivesh Sharma**, S., Zhao, L., Corpas, F. J., & Tripathi, D. K. 2024. Nanoscale materials and NO-ROS homeostasis in plants: trilateral dynamics. ***Trends in Plant Science*** **[IF: 17.3]**
4. Mishra, V., Tripathi, D. K., Rai, P., **Shivesh Sharma**, & Singh, V. P. 2024. Regulation of arsenate stress by nitric oxide and hydrogen sulfide in Oryza sativa seedlings: Implication of sulfur assimilation, glutathione biosynthesis, and the ascorbate-glutathione cycle and its genes**.** ***Plant Physiology and Biochemistry***, 215,109001. **[IF: 6.1]**
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6. Tripathi, S., Tiwari, K., Mahra, S., Victoria, J., Rana, S., Tripathi, D. K., & **Shivesh Sharma** 2024. Nanoparticles and root traits: mineral nutrition, stress tolerance and interaction with rhizosphere microbiota. *Planta*, 260(2), 34.**[IF: 3.6]**
7. Sharma, S., Tripathi, S., Tiwari, K., Mahra, S., & Sharma, S. 2025. Leveraging nano silica and plant growth promoting rhizobacteria (PGPR) isolated from Gangetic riparian zone to Combat Pendimethalin Toxicity in Brassica juncea. *Plant Nano Biology*, *11*, 100126. **[IF -7.7]**
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10. Tiwari, K., Tripathi, S., Mahra, S., Mathew, S., Rana, S., Tripathi, D.K. and **Sharma Shivesh**. 2024. Carrier based delivery system of phytohormones in plants: stepping outside of the ordinary. ***Physiologia Plantarum***, *176*(3), e14387l **[IF- 5.08]**
11. Tripathi, S., Sharma, S., Rai, P., Mahra, S., Tripathi, D.K., **Sharma Shivesh**. 2024. Synergy of Plant Growth Promoting Rhizobacteria and Silicon in regulation of AgNPs induced stress of rice seedlings. ***Plant Physiology and Biochemistry***, 108720. **[IF- 6.1]**
12. Tripathi, S., Mahra, S., Sharma, S., Mathew, S., and **Sharma Shivesh**. 2024. Interaction of Silver Nanoparticles with Plants: A Focus on the Phytotoxicity, Underlying Mechanism, and Alleviation Strategies. ***Plant Nano Biology***, 100082**. [IF -7.7]**
13. Kandhol,N., Rai, P., Mishra, V., Pandey, S., Kumar, S., Deshmukh, R., **Sharma Shivesh**, Singh, V.P., and Tripathi, D.K. 2024. Silicon regulates phosphate deficiency through involvement of auxin and nitric oxide in barley roots. ***Planta***, *259*(6), 144 **[IF- 4.3]**
14. Victoria J, Tripathi,S., Prakash, V., Tiwari, K., Mahra, S., Sharma, A., Rana, S., Kandhol, N., Sahi, S., Tripathi, D.K., **Sharma Shivesh**. 2023. Encapsulated nanopesticides application in plant protection: Quo vadis?. ***Plant Physiology and Biochemistry***, 108225 **[IF: 6.1]**
15. Sharma, S., Rai, P., Prakash, V.,Tripathi, S.,Tiwari, K., Gahlawat, N., Tripathi, D.K. and **Sharma Shivesh**. 2023. Ameliorative

effects of Si-SNP synergy to mitigate chromium induced stress in *Brassica juncea.* ***Environment Pollution****.* In Press.https://doi.org/10.1016/j.envpol.2023.122031 **[IF:8.9]**

16. Kandhol, N., Srivastava, A., Rai, P, **Sharma Shivesh,** Pandey, S., Singh, V.P., Tripathi, D.K. 2023. Cytokinin and indole- 3-acetic acid crosstalk is indispensable for silicon mediated chromium stress tolerance in roots of wheat seedlings. ***Journal of Hazardous Materials***. https://doi.org/10.1016/j.jhazmat.2023.133134. **[IF:13.6]**
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18. Devi, S. **Sharma Shivesh**, Tiwari, S., Bhatt, A.K., Singh, N.K. and Singh, M and Kumar, A. 2023.Screening for multifarious plant growth promoting and biocontrol attributes in Bacillus strains isolated from Indo Gangetic soil for enhancing growth of rice crops. ***Microorganisms***. DOI: 10.3390/microorganisms11041085. **[IF: 4.92]**
19. Tripathi, S.; Mahra, S.; J, V.; Tiwari, K.; Rana, S.; Tripathi, D.K.; Sharma, S.; Sahi, S. Recent Advances and Perspectives of Nanomaterials in Agricultural Management and Associated Environmental Risk: A Review. 2023. ***Nanomaterials***.13, 1604. https://doi.org/10.3390/ nano13101604 **[IF: 5.3]**
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23. Rai, P., Sharma, S., Tripathi, S., Prakash, V., Tiwari, K., Suri, S., &**Sharma, Shivesh**. 2022. Nanoiron: Uptake, translocation and accumulation in plant systems. ***Plant Nano Biology***, 100017**. [IF:7.7]**
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37. Prakash, V., Singh, V. P., Tripathi, D. K**., Sharma, Shivesh**& Corpas, F. J. 2021. Nitric oxide (NO) and salicylic acid (SA): A framework for their relationship in plant development under abiotic stress**.** ***Plant Biology***. **[IF:3.081]**
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BOOKS/PROCEEDINGS:

Sl. No	Title	Editors/Type	Publisher & ISSN/ISBN No
1.	Beneficial Chemical Elements of Plants: Recent Developments and Future Prospects	Pandey, S., Tripathi, D. K., Singh, V. P., **Sharma, Shivesh**., & Chauhan, D. K.	**John Wiley & Sons Ltd.** ISBN:9781119691419 |DOI:10.1002/9781119691419 © 2023
2.	Plant Life under Changing Environment. Responses and Management	Tripathi, D. K., Singh, V. P., Chauhan, D. K., **Sharma, Shivesh**., Prasad, S. M., Dubey, N. K., & Ramawat, N. (Eds.).	**Academic Press**, 2020 ISBN: 9780-1281-82055 2020
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7.	Harnessing Traditional Knowledge of Medicinal Plants of Baiga Tribe: Tapping Traditional Knowledge of Tribal Areas of Central India: A Case Study	Vasudha Singh and **Sharma Shivesh**	**Lambert** Academic Publishing, Germany, ISBN:3659279536, 9783659279539 2012

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