



# Shivam Singh Patel

M. Tech

Nanoscience and Nanotechnology

CSJMU, Kanpur

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## SUMMARY

M.Tech candidate in Nanoscience and Nanotechnology with hands-on research experience in nanoparticle synthesis, microbiological analysis, and experimental validation for biological applications. Skilled in laboratory experimentation, analytical testing, and interdisciplinary research integrating nanotechnology with biotechnology and diagnostic applications. Interested in RD roles involving microfluidics, point-of-care devices, and applied biomedical innovation.

## EDUCATION

Degree	Institute	Board / University	CGPA/Percentage	Year
M. Tech Nanoscience and Nanotechnology	University Institute of Engineering and Technology (UIET)	CSJMU Kanpur	8.1 CGPA	2024-2026
B. Tech Biotechnology	Institute of Engineering and Technology	BU Jhansi	7.4 CGPA	2019-2023
Senior Secondary School	B B B B U M V Salhepur, Azamgarh	UP Board	70%	2017
Higher Secondary School	S Parvati H S S J Pur Holpur, Azamgarh	UP Board	87.8%	2015

## EXPERIENCE & PROJECT

- **Integrated Role of PGPR and Metal Nanoparticles in Improving Spinach Growth Dynamics (*Spinacia oleracea*)** 1 year  
*Flavin Labs, Lucknow, Uttar Pradesh, India*
  - Conducted synthesis of ZnO and CaO nanoparticles and evaluated their individual and combined effects with Plant Growth-Promoting Rhizobacteria (PGPR) on spinach (*Spinacia oleracea*) growth dynamics, biochemical parameters, nutrient uptake, and stress mitigation as a sustainable alternative to chemical fertilizers.
- **QC- Microbiologist** 1 year  
*Alaina Healthcare, Himachal Pradesh, India*
  - \* Performed microbiological testing including MLT and specified pathogen testing (E. coli, Salmonella spp., Staphylococcus aureus, Pseudomonas aeruginosa, Candida albicans).
  - \* Conducted environmental monitoring and water testing in compliance with GMP guidelines.
  - \* Prepared, sterilized, and qualified culture media, including media growth promotion testing (GPT).
  - \* Operated and monitored LAF, autoclave, incubator, hot air oven, colony counter, pH meter, and microscope.
  - \* Ensured GMP/GLP compliance through SOP preparation, logbook and batch record documentation, and audit readiness (internal and external).
  - \* Handled microbial cultures, including proper maintenance, identification support, and biohazard disposal.
- **Antibiotic Resistance in Environmental Isolates from Polluted Water Sources** 6 month  
*Bundelkhand University, Jhansi, Uttar Pradesh, India*
  - \* Isolated and characterized bacteria from polluted water samples. Performed antimicrobial resistance profiling, DNA isolation, electrophoresis, and Southern blotting. Estimated protein content and analyzed the correlation between pollution and multi-drug resistance.

## SKILLS

- **Research & R&D Skills:** Research & Development Competencies, Experimental Design & Validation, Biological Sample Handling & Analysis, Nanomaterial Synthesis & Characterization, Laboratory Documentation & SOP Compliance, Data Analysis & Result Interpretation, Prototype Testing & Optimization (Research-scale)
- **Operate Lab Equipment:** LAF, Autoclave, Incubator, Hot Air Oven, Colony Counter, pH calibration, Spectrophotometer
- **Basic Computer Skills:** MS Word, Excel, PowerPoint, Graph plotting & scientific reporting, Basics of Bioinformatics

## CERTIFICATIONS

- Certification of participation in convocation science meet: poster presentation - Chhatrapati Shahu Ji Maharaj University
- Certification of participation in international conference HealthCon 2025: poster presentation - Chhatrapati Shahu Ji Maharaj University
- Certification of 1 week workshop program - Innovation Centre, Bundelkhand University, Jhansi
- Certificate of participation in a talk entitled "Antibodies - ek naam, anek kaam" organized by the Mikrobiologika Society, Ram Lal Anand College under the DBT Star College Scheme - Delhi University

## LANGUAGE

- **English:** Speaking, Reading, Writing

- **Hindi:** Mother tongue, Speaking, Reading, Writing