

Abhishek Pathak
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Objective

To carry out Research in the field of Life Science, wherein I can apply my knowledge as well as learn new concepts that would enable me to become an innovative researcher and come forth with a product which will prove beneficial for healthcare. Knowledge gained during the research will also be transferred to the next generation by teaching them the various concept and aspect of science.

Research Interests

- Plant Biotechnology
- Genetic Engineering
- Nano-Biotechnology
- Nano-Medicine

Academic Qualification

Ph.D. (Biotechnology) – Dr. Harisingh Gour Central University, Sagar (M.P.), Pursuing.

M.Sc. (Biotechnology) – Dr. Harisingh Gour Central University, Sagar (M.P.), 2016, First Division.

B.Sc. (Biotechnology) – St. Mary College, Vidisha (M.P.), (Degree awarded by Barkatullah University, Bhopal), 2014, First Division.

Higher Secondary – Navankur H. S. School (M.P. Board), 2010, First Division.

High School – Navankur H. S. School (M.P. Board), 2008, First Division.

Practical Skills

- Nano-particles fabrication by Biological route and their characterization techniques such as UV-VIS-Spectroscopy, FTIR, Raman, XRD, TEM and SEM.
- Plant tissue culture.
- Plant Genetic transformation through Agrobacterium.
- Molecular Biology techniques.
- Microbiological techniques.

- Biochemical and Enzyme activities assays.
- Molecular detection techniques: Elisa, Southern Blot, Western Blot etc.

Research Projects performed

Project 1

M.Sc. dissertation thesis

“Green synthesis of silver nanoparticles by using *Carissa carandus* berries extract” at Dept. of Biotechnology Dr. Harisingh Gour Vishwavidyalaya, Sagar (M.P.).

Project 2

BCIL-BITP Program

“Research and orientation in industrial scale process of Genomics/Plasmid DNA, Protein and Antibody: Hands on Recombinant Biotechnology” at Genext Genomics PVT LTD, Nagpur, Maharashtra.

Project 3

DST-SERB

“Metabolic engineering of Potato (*Solanum tuberosum* L) for enhanced vitamin B6 accumulation by overexpression of pyridoxine genes” sanctioned to Dr. Chandrama Prakash Upadhyaya, Assistant Professor, Department of Biotechnology, Dr. Harisingh Gour Vishwavidyalaya, Sagar, M.P.

Publication List (Peer Reviewed, International UGC/SCOPUS listed Journals)

1. Pundir, R. K., **Pathak, A.**, Upadhyaya, D. C., Muthusamy, A., & Upadhyaya, C. P. (2021). Red and Blue Light-Emitting Diodes Significantly Improve Tuberization of Potato (L.). *Journal of Horticultural Research*, 29(1), 95-108. <https://sciendo.com/es/article/10.2478/johr-2021-0010>
2. Joshi, N., **Pathak, A.**, Upadhyaya, D. C., Naidu, S. B., & Upadhyay, C. P. (2021). Synthesis of biocompatible Fe₃O₄ and MnO₂ nanoparticles for enhanced tuberization in potato (*Solanum tuberosum* L.). *Biocatalysis and Agricultural Biotechnology*, 102258. <https://www.sciencedirect.com/science/article/abs/pii/S1878818121003546?via%3Dihub>
3. Upadhyaya, C. P., Pundir, R. K., **Pathak, A.**, Joshi, N., & Bagri, D. S. (2020). Irradiation Studies of LED Light Spectra on the Growth and Development of Potato (*Solanum tuberosum* L.). *Plant Science Today*, 7(3), 406-416. <https://horizonpublishing.com/journals/index.php/PST/article/view/797>
4. Joshi, N., **Pathak, A.**, Anupam, R., Jain, N., Singh, J., & Upadhyaya, C. P. (2019). A Rapid and Efficient Biosynthesis of Metallic Nanoparticles Using Aqueous Extract of Chia (*Salvia hispanica*

L.) Seeds. *BioNanoScience*, 9(4), 893-902. <https://link.springer.com/article/10.1007/s12668-019-00672-6>

5. Joshi, N., Jain, N., **Pathak, A.**, Singh, J., Prasad, R., & Upadhyaya, C. P. (2018). Biosynthesis of silver nanoparticles using *Carissa carandas* berries and its potential antibacterial activities. *Journal of Sol-Gel Science and Technology*, 86(3), 682-689. <https://link.springer.com/article/10.1007/s10971-018-4666-2>
6. Upadhyaya, C. P., Bagri, D. S., Upadhyaya, D. C., **Pathak, A. K.**, & Kavar, P. G. (2016). Molecular and biochemical analysis of supplementation of calcium under in vitro condition on tuberization in potato (*Solanum tuberosum* L.). *Biocatalysis and agricultural biotechnology*, 7, 210-216. <https://www.sciencedirect.com/science/article/abs/pii/S1878818116301670>

Book Chapters

1. **Pathak A.** and Chandrama P. Upadhyaya (2022) A Brief Insight on the Role of Various Phytohormones in Potato (*Solanum tuberosum* L) Tuber Development. Shamsul Hayat et al. (Eds): Salicylic Acid - A Versatile Plant Growth Regulator. https://link.springer.com/chapter/10.1007/978-3-030-79229-9_13

Abstract/Poster published in recognized National and International Conferences/Seminar

Conferences| Seminar

1. **Abhishek Pathak**, Neha Joshi, Chandrama Prakash Upadhyaya, Jai Singh (2017) “Efficient method for biosynthesis of silver nanoparticles with enhance antimicrobial activity using the *Carissa carandas* (Karonda) aqueous extract” in the international conference on functional biological and molecular interactions: application in health and agriculture (FBMI 2017) at department of biochemistry, university of Lucknow, Lucknow, Dec. 19 – 23, 2017.
2. “Application of biogenic iron and manganese oxide nanoparticles on invitro tuberization of potato (*Solanum tuberosum* L.)”. International Conference on advance and innovation sin biotechnology for sustainable development, AKS University, Satna (MP). Apr 5-7, 2019.
3. “Amelioration in potato tuberization under light emitting diode (LED) on *invitro* tuberization of potato (*Solanum tuberosum* L.)”. Global Potato Conclave-2020, Gandhinagar, Gujarat, Jan 28-31, 2020.

Awards

- **GATE:** Score 355, Percentile 84.29
- BCIL funding for BITP 2016-17.

Extra-curricular Activities

- Participation in various essay competitions.
- Participated in a poster presentation organized in “COMPETITIVE EVENTS ON BIOTECHNOLOGY” sponsored by: Madhya Pradesh Biotechnology Council, Bhopal.
- Participated in inter-college competitions (quiz, model making, poster presentation).

Personal Profile

Name: Abhishek Pathak

Father's Name: Mr. Devendra Kumar Pathak

Date of Birth: 10-05-1992

Nationality: Indian

Strength: Teaching Quality, Leadership Quality, Analytical aptitude, Good Team work and punctuality.

Hobbies: Listening to music, Reading & Writing

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