Akhilesh Kumar Singh (M.Sc., M.Tech. & Ph.D.)
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AN OVERVIEW

Interdisciplinary trained Industrial Microbiologist and Biotechnologist with extensive experience ranges from physiology, biochemistry to biotechnology. Pursued Ph.D. in Microbially engineered Polyhydroayalkanoate (PHA) Biopolymer (Industrial Biotechnology) and M.Tech. (Agricultural Biotechnology) from the Indian Institute of Technology (IIT) (a pioneer worldwide recognized institution), Kharagpur, India followed by M.Sc. (Biotechnology) from Indian Institute of Technology (IIT) (another pioneer worldwide known institution), Roorkee, India. Well expertise in separation, characterization and material properties of bacterial and algal based processed PHA biopolymer. Furthermore, I have good working experience with GC, MS-spectrometry, HPLC, Bacterial Fermentation and Bioreactor with Biomass Processing, Growth/ Production Kinetics and Biomass/ Product Optimization by Statistical Modelling using Response Surface Methodology (RSM) including Data Analysis. My aim is to look into the current challenges and translate Bioplolymeric PHA as well as Biofuel into commercially viable applications using smart approaches with the involvement of cost-effective materials like lignocellulosic feedstock etc.

Keywords: Biopolymer, Biofuel, *Brevibacillus invocatus* MTCC 9039, *Nostoc muscorum, Chlorella,* Nitric oxide, *Pseudomonas aeruginosa* MTCC 7925, Polyhydroxyalkanoates, LCL-PHAs, MCL-PHA, PHAs, PHB, SCL-PHA, SCL-LCL-PHA co-polymer, Material Properties, cyanobacterial PHAs

ACADEMIC CREDENTIALS

Examination	Subject	Year of passing	Board/University
Ph. D.	Microbial Biopolymer [Polyhydroxyalkanoate (PHA) Thermoplastic]	2009	**Indian Institute of Technology (IIT), Kharagpur**
M. Tech.	Agricultural Biotechnology	2002	**Indian Institute of Technology (IIT), Kharagpur**
M. Sc.	Biotechnology	2000	**Indian Institute of Technology (IIT), Roorkee**
B. Sc.	Botany, Chemistry and Zoology	1996	Dr. Ram Manohar Lohia Avadh University, Faizabad, India
Intermediate (XII)	Biology, Chemistry, Physics, English and Hindi	1993	C. B.S.E, New Delhi, India
High School (X)	Science, Mathematics, Hindi, English and Social	1991	C. B.S.E, New Delhi, India

Ph.D. Dissertation:
Accumulation of a novel short-chain-length-long-chain-length polyhydroxyalkanoate co-polymer in a sludge-isolated *Pseudomonas aeruginosa* MTCC 7925 ***(Mentor: Prof. Nirupama Mallick, FNA & Head, Department of Agricultural & Food Engineering, Indian Institute of Technology (IIT) Kharagpur, West Bengal, India)***

M.Tech. Dissertation:
Role of Nitric Oxide (NO) in regulating copper toxicity-A case study with green microalga *Chlorella vulgaris* ***(Mentor: Prof. Nirupama Mallick, FNA & Head, Agricultural & Food Engineering Department, Indian Institute of Technology (IIT) Kharagpur, West Bengal, India)***

M.Sc. Dissertation: Studies on biodegradation of cellulose containing materials by *Rhizopus* species ***(Mentor: Prof. BMJ Pereira, Department of Biotechnology, Indian Institute of Technology (IIT) Roorkee, India).***

Academic attainments:

- Qualified **ASRB-NET (Agricultural Biotechnology)** September 2014. Indian Council of Agricultural Research (ICAR), India.
- Qualified **CSIR–JRF (NET) (Life Sciences)** June 2002. Council of Scientific Industrial Research (CSIR), India.
- Qualified **Graduate Aptitude Test in Engineering (GATE) (Life Science)** 2001 (Percentile: 95.06), All India Rank: 94 out of 2206 students (within top 4.2 % of students).

PROFESSIONAL ENHANCEMENT SCHEDULES

Research Experience

Senior Research Fellow (SRF)

Indian Institute of Technology, Kharagpur, India	Oct' 2005 - Sep' 2008

Junior Research Fellow (JRF)

Indian Institute of Technology, Kharagpur, India	Sep' 2003 - Oct'2005

Experience as Faculty

Lecturer, Amity Institute of Biotechnology, Amity University Uttar Pradesh Lucknow India	Sep' 2008-Dec' 2012
Senior Lecturer, Amity Institute of Biotechnology, Amity University Uttar Pradesh Lucknow India	Jan' 2013-Aug' 2014
Assistant Professor, Amity Institute of Biotechnology, Amity University Uttar Pradesh Lucknow India	Sep' 2014 – Oct' 2019
Assistant Professor, Department of Biotechnology, Mahatma Gandhi Central University, Motihari, India	Oct' 2019 - Till date

NOTABLE ATTAINMENTS

- Experienced in maintaining and managing Bacteria/ Microalgae/ Cyanobacteria culture collections and familiarity with culturing techniques.
- Investigated the antioxidative role of Nitric Oxide (NO) in chlorophycean alga (*Chlorella*) and strongly support the idea of NO as a versatile molecule with variable functions in plants, too.
- Efficiently developed a numerical and statistical model to optimize growth and Biopolymeric Polyhydroxyalkanoate/ Thermoplastics [Novel SCL-LCL-PHA co-polymer/ P(3HB-*co*-3HV) co-polymer /PHB] content of Bacteria/ Algae.
- Monitored growth and physiology of Bacteria/ Algae under various stress conditions in order to maximize Biopolymeric Polyhydroxyalkanoates production.
- Possess working knowledge on Biopolymeric Polyhydroxyalkanoates characterization.
- Efforts towards cost-effective production of novel Biopolymeric SCL-LCL-PHA co-polymers from *Pseudomonas aeruginosa* MTCC 7925 using inexpensive substrates

RESEARCH INDICATORS

Total impact factor	***= 62***
h-index	***= 13***
i10-index	***= 16***
Citations	***= 580***

PUBLICATIONS

1. Rani H, Singh SP, Yadav TP, Khan MS, Ansari MI, **Singh AK (2020)** In-vitro catalytic, antimicrobial and antioxidant activities of bioengineered copper quantum dots using *Mangifera indica* (L.) leaf extract. Materials Chemistry and Physics. 239:122052 **(Impact Factor: 2.781;** Publisher: **Elsevier**) **(*Published as corresponding author*).**
2. **Singh AK**, Porwal P **(2020)** Nano-technology as Potential and Innovative Platform towards Waste Water Treatment: An Overview. In: Bhushan I**,** Singh VK, Tripathi, DK (Eds.), Nanomaterials and Environmental Biotechnology, **Springer** (ISBN 978-3-030-34544-0) (In Press).
3. **Singh AK**, Yadav TP, Pandey B, Singh SP **(2020)** Recent Insights on Solubility and Stability of Biomolecules in Ionic Liquid. In: Inamuddin, Asiri, AMA Suvardhan K (eds.), Green Sustainable Process for Chemical and Environmental Engineering and Science: Ionic Liquids as Green Solvents, **Elsevier** (ISBN: 9780128173862) (In Press).
4. Iqbal MS, **Singh AK**, Ansari MI **(2020)** Effect of drought stress on crop production. In: Rakshit A, Singh HB, Singh AK, Singh US, Fraceto L. (eds.), New frontiers in Stress Management for Durable Agriculture, **Springer** (ISBN 978-981-15-1322-0) (In Press).
5. **Singh AK**, Singh SP, Porwal P, Pandey P, Srivastava JK, Ansari MI, Chandel AK **(2020)** Processes and characterization for bio-based polymers from Polyhydroxyalkanoates (PHAs). In: Processing and Development of Polysaccharide-Based Biopolymers for Packaging Applications **Elsevier** (ISBN: 9780128187951) (In Press) **(*Published as corresponding author*).**
6. Singh SP, Ansari MI, Pandey B, Srivastava JK, Yadav TP, Rani H, Parveen A, **Singh AK (2020)** Recent Trends and Advancement towards Phyto-Mediated Fabrication of Noble Metallic Nanomaterials: Focus on Silver, Gold, Platinum and Palladium. In: Bhushan I**,** Singh VK, Tripathi, DK (Eds.), Nanomaterials and Environmental Biotechnology, **Springer** (ISBN 978-3-030-34544-0) (In Press, ***Published as corresponding author*).**
7. Porwal P, Porwal S, Singh SP, Husen A, **Singh AK (2020)** Improving futuristic nanomaterial researches in forestry sector: An overview. In: Husen A, Jawaid M (eds.), Nanomaterials for Agriculture and Forestry Applications, Elsevier (ISBN: 9780128178522) (In Press) **(*Published as corresponding author*).**
8. Iqbal MS, **Singh AK**, Singh SP, Ansari MI **(2020)** Nanoparticles and Plant Interaction with Respect to Stress Response. In: Bhushan I**,** Singh VK, Tripathi, DK (Eds.), Nanomaterials and Environmental Biotechnology, **Springer** (ISBN 978-3-030-34544-0) (In Press).
9. **Singh AK**, Yadav TP, Pandey B, Gupta V, Singh SP **(2019)** Engineering Nanomaterials for Smart Drug Release: Recent Advances and Challenges. In: Mishra RK, Thomas S, Mohapatra S, Dasgupta N, Ranjan S (eds.), Applications of Targeted Nano-Drugs and Delivery Systems, **Elsevier,** pp. 411-449 (ISBN: 978-0-12-814029-1).
10. **Singh AK**, Sharma L, Srivastava JK, Mallick N, Ansari, MI **(2018)** Microbially Originated Polyhydroxyalkanoate (PHA) Biopolymers: An Insight into the Molecular Mechanism and Biogenesis of PHA Granules. In: Singh, OV Chandel, AK, (eds.), Sustainable Biotechnology-Enzymatic resources of Renewable Energy, **Springer,** pp. 355-398 (ISBN: 978-3-319-95480-6) **(*Published as corresponding author*).**
11. **Singh AK,** Srivastava JK, Chandel AK, Sharma L, Mallick N, Singh SP **(2019)** Biomedical Applications of Microbially Engineered Polyhydroxyalkanoates: An Insight into Recent Advances, Bottlenecks and Solutions. Applied Microbiology and Biotechnology 103: 2007–2032 (**Impact Factor: 3.670;** Publisher**: Springer) (*Published as corresponding author*).**
12. Misra V, Shrivastava AK, Mall AK, Solomon S, **Singh AK**, Ansari MI **(2019**) Can sugarcane cope with increasing atmospheric CO_2 concentration? Australian Journal of Crop Science (**Impact Factor: 1.02;** Publisher**: Southern Cross Publishing-Australia)**.
13. Pritam M, Singh G, Swaroop S, **Singh AK**, Singh SP **(2019)** Exploitation of reverse vaccinology and immunoinformatics as promising platform for genome-wide screening of new effective vaccine candidates against *Plasmodium falciparum*. BMC Bioinformatics 19:468. (**Impact Factor: 2.511;** Publisher**: Springer).**

14. **Singh AK,** Yadav TP, Pandey B, Gupta V, Singh SP **(2019)** Engineering Nanomaterials for Smart Drug Release: Recent Advances and Challenges. In: Mishra RK, Thomas S, Mohapatra S, Dasgupta N, Ranjan S (eds.), Applications of Targeted Nano-Drugs and Delivery Systems, **Elsevier**, pp. 411-449 (ISBN: 978-0-12-814029-1).
15. Singh G, Pritam M, Banerjee M, **Singh AK**, Singh SP **(2019)** Genome based screening of epitope ensemble vaccine candidates against dreadful visceral leishmaniasis using immunoinformatics approach. Microbial Pathogenesis 136: 103704 **(Impact Factor: 2.581;** Publisher: **Elsevier**).
16. Chandel AK, Garlapati VK, **Singh AK,** Antunes FAF, da Silva SS **(2018)** The path forward for lignocellulose biorefineries: bottlenecks, solutions, and perspective on commercialization. Bioresource Technology 246:370-381 **(Impact Factor: 6.669;** Publisher: **Elsevier**).
17. **Singh, AK,** Pal P, Gupta V, Yadav TP, Gupta V, Singh, SP **(2018)** Green synthesis, characterization and antimicrobial activity of zinc oxide quantum dots using *Eclipta alba*. Materials Chemistry and Physics 203: 40-48 **(Impact Factor: 2.781;** Publisher: **Elsevier**).
18. Pandey B, **Singh AK,** Singh SP **(2019)** Nanoparticles Mediated Gene Knockout through miRNA Replacement: Recent Progress and Challenges. In: Mishra RK, Thomas S, Mohapatra S, Dasgupta N, Ranjan S (eds.), Applications of Targeted Nano-Drugs and Delivery Systems, **Elsevier**, pp. 469-497 (ISBN: 978-0-12-814029-1).
19. Bhatia L, Chandel A, **Singh AK**, Om V. Singh **(2018).** Biotechnological Advances in Lignocellulosic Bioethanol Production. In: Singh OV, Chandel AK (eds.), Sustainable Biotechnology-Enzymatic resources of Renewable Energy, **Springer,** pp. 57-82 (ISBN: 978-3-319-95480-6).
20. **Singh AK**, Mallick N (2017) Advances in cyanobacterial polyhydroxyalkanoates production. **FEMS Microbiology Letters** 364: 20; doi:10.1093/femsle/fnx189. **(Impact Factor: 1.994;** Publisher: **Oxford University Press**).
21. **Singh AK,** Mallick N **(2017)** Pseudomonas aeruginosa MTCC 7925: Biofactory for Novel SCL-LCL-PHA, LAP Lambert Academic Publishing, pp. 1-148 (ISBN: 9783659108136). **(*Published as corresponding author*).**
22. **Singh AK,** Sharma L, Mallick N, Mala J **(2017)** Progress and challenges in producing polyhydroxyalkanoate biopolymers from cyanobacteria. Journal of Applied Phycology 29: 1213-1232 (**Impact Factor: 2.635;** Publisher: **Springer**; ***Published as corresponding author***).
23. **Singh AK**, Mallick N **(2016)** Biological system as a reactor for production of biodegradable thermoplastics, Polyhydroxyalkanoates. In: Thangadurai D, Sangeetha J (eds), Industrial Biotechnology: Sustainable Production and Bioresource Utilization, **CRC Press Taylor and Francis, USA**, pp. 281-323 (ISBN No. 9781771882699) (***Published as corresponding author***).
24. Mallick N, Bagchi SK, Koley S, **Singh AK (2016)** Progress and Challenges in Microalgal Biodiesel Production. Frontiers in Microbiology Article 1019. (**Impact Factor: 4.259**; Publisher: **Frontiers).**
25. Sharma L, Srivastava JK, **Singh AK (2016)** Biodegradable Polyhydroxyalkanoate Thermoplastics Substituting Xenobiotic Plastics: A Way Forward for Sustainable Environment. In: Singh A, Prasad SM, Singh RP (eds.), Plant Responses to Xenobiotics, **Springer,** pp. 317-346 (ISBN No. 978-981-10-2859-5) (*Published as corresponding author*).
26. **Singh AK,** Bhati R**,** Mallick N **(2015)** *Pseudomonas aeruginosa* MTCC 7925 as a biofactory for production of the novel SCL-LCL- PHA thermoplastic from non-edible oils. Current Biotechnology 4:65-74. **(Impact Factor: Awaited;** Publisher: **Bentham Science**; *Published as corresponding author*).
27. Sharma L, **Singh AK (2015)** Algal biofuel: A sustainable green energy. In: Bag, N. and Murgan, R. (eds.), Biotechnology in India: Initiatives and Accomplishments, **New India Publishing Agency**, **New Delhi, India,** pp. 205-222 (ISBN No. 9789385516030) (*Published as corresponding author*).
28. Kumar A, Srivastava JK, Mallick N, **Singh AK (2015)** Commercialization of bacterial cell factories for the sustainable production of polyhydroxyalkanoate thermoplastics: Progress and prospects. Recent Patents on Biotechnology 9: 4-21 **(Impact Factor: 1.0;** Publisher: **Bentham Science**; *Published as corresponding author as well as editorial choice).*

29. **Singh AK,** Bhati R, Samantaray S, Mallick N **(2013)** *Pseudomonas aeruginosa* MTCC 7925: Producer of a Novel SCL-LCL-PHA Co-polymer. Current Biotechnology 2:81-88. **(Impact Factor: Awaited;** Publisher: **Bentham Science**; *Published as corresponding author*).
30. Sankhla IS, Bhati R, **Singh AK,** Mallick N **(2010)** Poly(3-hydroxybutyrate-*co*-3- hydroxyvalerate) co-polymer production from a local isolate, *Brevibacillus invocatus* MTCC 9039. Bioresource Technology 101:1947-1953. **(Impact Factor: 6.669;** Publisher: **Elsevier**).
31. **Singh AK,** Mallick N **(2009)** SCL-LCL-PHA copolymer production by a local isolate, *Pseudomonas aeruginosa* MTCC 7925. Biotechnology Journal 4:703-711. **(Impact Factor: 3.543;** Publisher: **Wiley**).
32. **Singh AK,** Mallick N **(2009)** Exploitation of inexpensive substrates for production of a novel SCL–LCL-PHA co-polymer by *Pseudomonas aeruginosa* MTCC 7925. Journal of Industrial Microbiology and Biotechnology 36:347-354. **(Impact Factor: 2.993;** Publisher: **Springer**).
33. **Singh AK,** Mallick N **(2008)** Enhanced production of SCL-LCL-PHA co-polymer by sludge-isolated *Pseudomonas aeruginosa* MTCC 7925. Letters in Applied Microbiology 46:350-357. **(Impact Factor: 1.805;** Publisher: **Wiley**).
34. Mallick, N., Sharma, L. and **Singh, A. K. (2007)** Poly-β-hydroxybutyrate accumulation in *Nostoc muscorum*: effects of metabolic inhibitors. Journal of Plant Physiology 164:312-317. **(Impact Factor: 2.825;** Publisher: **Elsevier**).
35. Sharma L, **Singh AK,** Panda B, Mallick N **(2007)** Process optimization for poly-β-hydroxybutyrate production in a nitrogen fixing cyanobacterium, *Nostoc muscorum* using response surface methodology. Bioresource Technology 98:987-993. **(Impact Factor: 6.669;** Publisher: **Elsevier**).
36. Sharma L, Panda B, **Singh AK,** Mallick N **(2006)** Studies on poly-β-hydroxybutyrate synthase activity of *Nostoc muscorum*. Journal of General and Applied Microbiology, 52:209-214. **(Impact Factor: 1.172;** Publisher: **Microbiology Research Foundation, University of Tokyo).**
37. **Singh AK,** Sharma L, Mallick N **(2004)** Antioxidative role of nitric oxide on copper toxicity to a chlorophycean alga, *Chlorella*. Ecotoxicology and Environmental Safety 59:223-227 (**Impact Factor: 4.527;** Publisher: **Elsivier).**
38. Panda B, Sharma L, **Singh AK,** Mallick N **(2008)** Thin layer chromatographic detection of poly-β-hydroxybutyrate (PHB) and poly-β-hydroxybutyrate (PHV) in cyanobacteria. **Indian Journal of Biotechnology** 7:230-234. (**Impact Factor: 0.289;** Publisher: **National Institute of Science Communication & Information Resources, Dr K S Krishnan Marg, New Delhi, India).**

CONFERENCE/ SEMINAR/ SYMPOSIUM PARTICIPATION

1. Parveen, A., Rani. H. and **Singh, A. K.** (2018) Green Synthesis, Characterization and Animicrobial Activities of Nickel Nanoparticles. National Conference on "Biological applications of Nanomaterials" organised by **Amity Institute of Biotechnology, Amity University Uttar Pradesh, Lucknow campus, January 9, p. 38.**
2. Rani. H., Parveen, A. and **Singh, A. K.** (2018) Exploitation of *Dhatura inoxia* as potential platform for biogenic synthesis of Zinc nanoparticles. National Conference on "Biological applications of Nanomaterials" organised by **Amity Institute of Biotechnology, Amity University Uttar Pradesh, Lucknow campus, January 9, p. 37.**
3. Verma, A., Chauhan, S. S., Pankaj, V., Singh, S. P. and **Singh, A. K.** (2018) Studies on the Effect of Biogenically Synthesized Copper oxide Nanoparticle on Mung Plant (*Vigna radiata*). National Conference on "Biological applications of Nanomaterials" organised by **Amity Institute of Biotechnology, Amity University Uttar Pradesh, Lucknow campus, January 9, p. 27.**
4. **Singh, A. K.,** Khan, S.A. and Singh, S. P. (2017) Studies on the Effect of Biogenically Synthesized Zinc Nanoparticles on Germination and Growth of Gram Seedlings. National Conference on "Energy, Environment and its Impact on Society" **organized by K. N. Govt. P.G. College, Gyanpur, Bhadohi (UP), January 19-20, p. 57.**
5. Singh, S. P., Verma, A. and **Singh, A. K.** (2017) Eco-friendly Synthesis of Copper Oxide Nanoparticles using Marigold Flower Extract. National Conference on "Energy, Environment and its Impact on Society" organized by **K. N. Govt. P.G. College, Gyanpur, Bhadohi (UP), January 19-20, p. 58.**

6. **Singh, A. K.,** Pal, P., Yadav, T. P. and Singh, S. P. (2016) Transmission electron microscopy based characterization of biogenically engineered Zinc oxide quantum dots. International Conference on Electron Microscopy, **Indian Institute of Technology (IIT, BHU), Varanasi (India), June 2-4, p. 152.**
7. Asif, S., Singh, S. P. Yadav, T. P. and **Singh, A. K.** (2016) Green synthesis and characterization of multi-applicative Nickel nanoparticles. International Conference on Electron Microscopy, **Indian Institute of Technology (IIT, BHU), Varanasi (India), June 2-4, p. 150.**
8. Shubhi, R., **Singh, A. K.,** Yadav, T. P. and Singh, S. P. (2016) Characterization of biogenically engineered copper nanoparticles. International Conference on Electron Microscopy, **Indian Institute of Technology (IIT, BHU), Varanasi (India),** June 2-4, p. 151.
9. **Singh, A. K.** Khan, S. A. and Singh, S. P. (2016) Exploitation of *Tagetes* flower as potential platform for biogenic synthesis of Zinc nanoparticles. National seminar on Advances in Plant Science Frontier: Development and Environment, **Gandhi Faiz-e-Aam College, Shahjahanpur, Bareilly, U.P. (India),** November 26-27, p. 85.
10. Rani, H., Singh, V. K. and **Singh, A. K.** (2016) Biogenic synthesis and characterization of of Silver nanoparticles using leaf extract of *Psoralea corylifolia*. National seminar on Advances in Plant Science Frontier: Development and Environment, **Gandhi Faiz-e-Aam College, Shahjahanpur, Bareilly, U.P. (India),** November 26-27, p. 101.
11. **Singh, A. K.** and Mallick, N. (2015) *Pseudomonas aeruginosa* MTCC 7925 biofactories: Producer of sustainable novel SCL-LCL-PHA co-polymer thermoplastics from non-edible oils. International Conference on Contemporary Advances of Science & Technology, **Banaras Hindu University (BHU), Varanasi (India)**, August 7-9, p. 207.
12. Rastogi, S., **Singh, A. K.** and Singh, S. P. (2015) *Anethum sowa* leaf cell factories: A viable and sustainable approach for copper nanoparticles production. International Conference on Contemporary Advances of Science & Technology, **Banaras Hindu University (BHU), Varanasi (India)**, August 7-9, p. 199.
13. Pal, P., Singh, S. P. and **Singh, A. K.** (2015) *Eclipta alba* biofactories: A promising and sustainable transformation platform for the synthesis of Zn nanoparticles. International Conference on Contemporary Advances of Science & Technology, **Banaras Hindu University (BHU), Varanasi (India)**, August 7-9, p. 198.
14. Asif, S., **Singh, A. K.** and Singh, S. P. (2015) Sunlight driven *Mentha arvensis* Biofactories: Meaditor for the producer of Nickel Nanoparticles. International Conference on Contemporary Advances of Science & Technology, **Banaras Hindu University (BHU), Varanasi (India)**, August 7-9, p. 176.
15. **Singh, A. K.,** Mallick, N. and Aayushi, P. (2015) Production of a novel thermoplastic from *Pseudomonas aeruginosa* MTCC 7925: A boom for Pharmaceutical Industry. National Symposium on Interfacing Chemical Biology & Drug Design, Amity Institute of Pharmacy, **Amity University Uttar Pradesh Lucknow Campus, (India)**, February 24-25, p. 54.
16. Pal, P., Singh, S. P. and **Singh, A. K.** (2015) *Eclipta alba* leaf extract as a source for the green synthesis of zinc nanoparticles. National Conference on Recent Trends in Applied Microbiology, Human Health & Environment, **Bundelkhand University Jhansi, Uttar Pradesh (India),** March 27-28, 2015, p. 30.
17. Asif, S., **Singh, A. K.** and Singh, S. P. (2015) *Mentha arvensis* leaf extract: Mediator for green synthesis of nickel nanoparticles. National Conference on Recent Trends in Applied Microbiology, Human Health & Environment, **Bundelkhand University Jhansi, Uttar Pradesh (India),** March 27-28, 2015, p. 32.
18. Rastogi, S., Singh, S. P. and **Singh, A. K.** (2015) Eco-friendly synthesis of copper nanoparticles by exploiting leaf extract of *Anethum sowa*. National Conference on Recent Trends in Applied Microbiology, Human Health & Environment, **Bundelkhand University Jhansi, Uttar Pradesh (India),** March 27-28, 2015, p. 40.
19. **Singh, A. K.** and Mallick, N. (2014) Production of a novel short-chain-length-long-chain-length Polyhydroxyalkanoate co-polymer by *Pseudomonas aeruginosa* MTCC 7925 from various carbon substrates. International Conference on Life Sciences, Informatics, Food and Environment, **Jaypee Institute of Information Technology, Noida (India),** August 29-30. Indo Global Journal of Pharmaceutical Sciences 4(3): 219.

20. Sankhla, I. S., **Singh, A. K.,** Mallick, N. (2014) Exploitation of a local isolate, *Brevibacillus invocatus* MTCC 9039 for production of poly(3-hydroxybutyrate-*co*-3-hydroxyvalerate) co-polymer.International Conference on Life Sciences, Informatics, Food and Environment, **Jaypee Institute of Information Technology, Noida (India),** August 29-30. Indo Global Journal of Pharmaceutical Sciences 4(3): 187.
21. Omer, N., Srivastava, A. K., **Singh, A. K.** (2013) Studies on biodegradation of pesticides by *Pseudomonas aeruginosa* and *Bacillus subtilis*. International Conference on Health, Environment and Industrial Biotechnology "Biosangam", **Motilal Nehru National Institute of Technology (NIT), Allahabad (India),** November 21-23, P. 170.
22. Singh, S. P. and **Singh, A. K.** (2013) Nanomaterials from renewable resources: Biosynthesis and biotechnological importance. International Conference on Nanoscience & Nanotechnology, **Babasaheb Bhimrao Ambedkar University (Central University), Lucknow, (India),** November 18-20, p. 188.
23. **Singh, A. K.** and Mallick, N. (2011) Biodegradation of cellulose containing materials by *Rhizopus* sp. National Symposium on Biodiversity for Food Security - Challenges and Devising Strategies, **Indian Institute of Pulses Research Kanpur (India),** December 10 - 11, p. 123.
24. **Singh, A. K.** and Mallick, N. (2005) Polyhydroxyalkanoates (PHA) accumulation in sludge-isolated *Pseudomonas* sp. International Congress on Chemistry and Environment, The Emerald Heights International School, Indore (India), December 24 - 26, p. 113.
25. **Singh, A. K.** and Mallick, N. (2004) Antioxidative role of nitric oxide (NO) on copper toxicity to a chlrophycean alga *Chlorella vulgaris*. National Symposium on Recent Trends in Algal Biology and Biotechnology, Punjabi University, Patiala (India), February 4 - 5, p. 59.

PARTICIPATION IN FACULTY INDUCTION PROGRAMME/ MOOCs/ WORKSHOP

1. **Singh, A. K. (2020)** First Faculty Induction Programme, School of Social Sciences, **Mahatma Gandhi Central University, Motihari, Bihar, (India),** January 13-20.
2. **Singh, A. K. (2019)** agMOOCs on Fundamentals of Agricultural Extension, **Centre for Development of Technical Education, IIT Kanpur, India in association with Commonwealth of Learning Canada** (Eight-week online course).
3. **Singh, A. K. (2019)** agMOOCs on Resource Management in Rainfed Drylands **Centre for Development of Technical Education, IIT Kanpur, India in association with Commonwealth of Learning Canada** (Five-week online course).
4. **Singh, A. K. (2018)** agMOOCs on Functional Foods: Concept, Technology and Health Benefits **Centre for Development of Technical Education, IIT Kanpur, India in association with Commonwealth of Learning Canada** (Four-week online course).
5. **Singh, A. K. (2017)** Pre-conference workshop on Thin Film Solar Cells, **CSIR-National Physical Laboratory (NPL), New Delhi, India,** November 13.
6. **Singh, A. K. (2016)** Pre-conference workshop of Electron Microscope Society of India (EMSI) on Advances in Electron Probe Microanalysis, Department of Geology, Centre of Advanced Study**,** **Banaras Hindu University (BHU), Varanasi (India),** June 01.
7. **Singh, A. K. (2016)** Interactive Workshop on Strengthening Research & Innovation, **Amity University Uttar Pradesh Lucknow Campus, (India),** April 13.
8. **Singh, A. K. (2016)** Pre-conference workshop on Basics of Electron Backscattered diffraction, Electron Energy Loss spectroscopy and Electron diffraction in Materials science, Department of Metallurgical Engineering**, Indian Institute of Technology (IIT, BHU), Varanasi (India),** May 30- June 1.
9. **Singh, A. K. (2015)** International Workshop on Nanoscience & Life, **Department of Physics, Banaras Hindu University (BHU), Varanasi (India),** February 26-02 March.
10. **Singh, A. K. (2015)** Workshop on Energy Materials: Synthesis to Application, **Banaras Hindu University (BHU), Department of Physics, Varanasi (India),** December 01 -07.
11. **Singh, A. K. (2015)** Workshop on Innovation & Intellectual Property Rights (IPR), **Amity University Uttar Pradesh Lucknow Campus, (India)**, **March 03**.

ONGOING Ph.D. SUPERVISION AS CO-GUIDE

1. Phytogenic transition metal nanoparticles: synthesis, characterization and application oriented studies **(Ph.D. Scholar Name: Humiara Rani; Enrollment No.: A7117316005; Batch: July 2016-2019).**
2. Studies on synthesis, characterization and potential applications of Nickel nanoparticles **(Ph. D. Scholar Name: (Ph.D. Scholar Name: Ashna Parveen; Enrollment No.: A7117317007; Batch: January 2017-2020).**

COMPLETED Ph.D. SUPERVISION AS GUIDE (DEGREE AWARDED IN 2018)

1. Molecular and functional analysis of gamma aminobutyric acid (GABA): Transaminase during leaf senescence in *Arabidobsis thaliana* **(Ph.D. Scholar Name: Ms. Syed Uzma Jalil; Enrollment No.: A7117314002; Batch: January 2014-2016).**

M.TECH./ M.SC. AND B.TECH. LEVEL SUPERVISION

1. **M.Tech. Dissertation:**
   - ***(i)*** Studies on biodegradation of pesticides by *Pseudomonas aeruginosa and Bacillus subtilis* **(Nimisha Omer; Enrollmen No.: A7110711011).**
2. **M.Sc. Dissertation:**
   - *(i)* Leaf extract of *Mentha arvensis*: A potential mediator for the biogenic synthesis of nickel nanoparticles **(Shafaque Asif; Enrollmen No.: A7100213013).**
   - *(ii)* *Eclipta alba* leaf extract: A green factory for the synthesis of multi-applicative zinc nanoparticles **(Priti Pal; Enrollmen No.: A7100213018).**
   - *(iii)* Exploitation of *Anethum sowa* leaf extract as an agent for the synthesis of metallic copper nanoparticles: An environmentally acceptable biological approach **(Shubhi Rastogi; Enrollmen No.: A7100213005).**
3. **B.Tech. Dissertation:**
   - *(i)* Studies on *Anethum graveolens* and *Tagetes* as green factories for the synthesis of multi-applicative Copper nanoparticles and their optimization **(Archana Verma; Enrollmen No.: A7100112011).**
   - *(ii)* Studies on synthesis and application of zinc and nickel nanoparticles using plant system **(Shweta Singh Chauhan; Enrollmen No.: A7104112013).**
   - *(iii)* *Solanum nigrum* and *eclipta alba* leaf cell factories: A sustainable way towards synthesis and application of zinc and copper nanoparticles **(Sneha Singh; Enrollmen No.: A7104112052).**
   - *(iv)* Studies, optimization and application of Nickel nanoparticles exploiting *Tagetes* flower and *Mentha arvensis* extract **(Vaishali Pankaj; Enrollmen No.: A71004112007).**
   - *(v)* *Tagetes* flower and *Eclipta alba* leaf extract mediated synthesis, optimization and application of Zinc nanoparticles **(Sadaf Aiman Khan; Enrollmen No.: A7104112010).**

PARTICIPATION IN CONFERENCE ORGANIZATION

1. National Conference on "Biological applications of Nanomaterials" organised by **Amity Institute of Biotechnology, Amity University Uttar Pradesh, Lucknow campus,** January 9, 2018.
2. National Conference on Bioengineering & Biotechnology: An Industrial Perspective (2014) organized by **Amity Institute of Biotechnology, Amity University Uttar Pradesh Lucknow Campus (India),** October 16-17, 2014.
3. National Conference on Women Power in Cutting Edge Biotechnology (2013) organized by **Amity Institute of Biotechnology, Amity University Uttar Pradesh Lucknow Campus (India),** October 17-18.

PARTICIPATION IN FACULTY DEVELOPMENT PROGRAMME

1. **Singh, A. K.** (2017) Faculty Development Programme on GLP and GMP, **Amity University Uttar Pradesh Lucknow Campus (India),** March 17th.
2. **Singh, A. K.** (2016) Faculty Development Programme on Biosafety and Bioethics in Lifesciences, **Amity Institute of Biotechnology, Amity University Uttar Pradesh Lucknow Campus (India),** October 15th.

PARTICIPATION IN ACADEMIC/ ADMINISTRATIVE RESPONSIBILITIES

1. Member of Central Examination control committee (2010-2015) at Amity University Uttar Pradesh Lucknow Campus, India (responsible for conduction of end semester examination) .
2. Member of publication committee (2015-2016) of Biotechnology Department, Amity University Uttar Pradesh Lucknow Campus, India.
3. Member of convocation committee (2010-2013) of Biotechnology Department, Amity University Uttar Pradesh Lucknow Campus, India.
4. Programme leader of B.Sc. (H) Biotechnology (Batch: 2015-2018) at Biotechnology Department of Amity University Uttar Pradesh Lucknow Campus, India.
5. Mentor of M.Tech. Biotechnology (Batch: 2015-2017) at Biotechnology Department of Amity University Uttar Pradesh Lucknow Campus, India.
6. Member of course advisory committee of B.Sc. (H) Biotechnology (Batch: 2015-2018) at Biotechnology Department of Amity University Uttar Pradesh Lucknow Campus, India.
7. Member of Student Research Committee (SRC) for Ph.D. programme (2015-2019) at Biotechnology Department of Amity University Uttar Pradesh Lucknow Campus, India.
8. Member of Annual Function Committee (AMIPHORIA) (2013-2019), Amity University Uttar Pradesh Lucknow Campus, India.
9. Member of Annual Sports Committee (SANGTHAN) (2014-2019), Amity University Uttar Pradesh Lucknow Campus, India.
10. Member of Admission Boards (2015-2019) at Biotechnology Department of Amity University Uttar Pradesh Lucknow Campus, India.
11. Member of Anti-Ragging Squad (2009-2010) at Amity University Uttar Pradesh Lucknow Campus, India.
12. Member of orientation program committee (2015-2019) at Biotechnology Department of Amity University Uttar Pradesh Lucknow Campus, India.

MEMBER OF PROFESSIONAL BODY

1. Life Member of *Electron Microscope Society of India (EMSI)*, India
2. Life member of *Uttar Pradesh Academy of Sciences (UPAS), India*.
3. Life member of *Society for Applied Biotechnology (SAB), India*.

MEMBER OF EDITORIAL BOARD

1. Member of Editorial Board of International Journal entitled "*Indo Global Journal of Pharmaceutical Sciences*"

REVIEWER OF JOURNAL

1. Reviewer of International Journal entitled "*Journal of Cleaner Production*" (**Elsevier; Impact Factor: 6.395)**
2. Reviewer of International Journal entitled "International Journal of Biological Macromolecules" **(Elsevier; Impact Factor: 4.784)**
3. Reviewer of International Journal entitled *"Algal Research"* **(Elsevier; Impact Factor: 3.723).**
4. Reviewer of International Journal entitled "*Applied Biochemistry and Biotechnology*" **(Springer; Impact Factor: 2.14)**
5. Reviewer of International Journal entitled "*Saudi Journal of Biological Sciences"* **(Elsevier; Impact Factor: 2.820).**

6. Reviewer of International Journal entitled "*Biotechnology Progress*" **(Wiley; Impact Factor: 2.406).**
7. Reviewer of International Journal entitled "*Journal of Microbiology, Biotechnology and Food Sciences*" **(Indexed in Web of Science; Impact Factor: Awaited).**
8. Reviewer of International Journal entitled "*Iranian Journal of Science* and *Technology, Transaction A: Science*" **(Springer; Impact Factor: 0.692).**
9. Reviewer of International Journal entitled "*Evolutionary Bioinformatics"* **(SAGE; Impact Factor: 2.203).**
10. Reviewer of International Journal entitled "Chemical Papers" **(Springer; Impact Factor: 1.246)**
5. Reviewer of International Journal entitled "*Karbala International Journal of Modern Science*" **(Elsevier; Impact Factor: Awaited)**
6. Reviewer of International Journal entitled "*Chemical and Biological Technologies in Agriculture*" **(Springer; Impact Factor: 2.78)**
7. Reviewer of International Journal entitled "*Current Biotechnology*" (Bentham Science; Impact Factor: Awaited).
8. Reviewer of International Journal entitled "*Environmental Health Insights*" (SAGE; Impact Factor: Awaited)
9. Reviewer of International Journal entitled "International Journal of Microbiology and Biotechnology" (Science Publishing Group).
10. Reviewer of International Journal entitled "*Biotechnology Journal*". (**Wiley; Impact Factor: 3.543**).

ANALYTICAL EXPERTISE

- Proficiency in GC, GC-MS, UV-VIS Spectrophotometer, TLC, NMR (^{1}H-NMR and ^{13}C-NMR), Sonicator, Centrifuge, Differential Scanning Calorimetry (DSC), Thermogravimetric Analyzer (TGA), Mechanistic Analyzer, Liquid Scintillation Counter, Oxygen analyzer and Atomic Absorption Spectroscopy (AAS).
- Well conversant with biochemical separation techniques.
- Conversant with major software like Design Expert, SPSS, Chem Window, Origin, including basic computational software.

PERSONAL DOSSIER

Father's Name	**:** Shri M. Singh
Date of Birth / Place	**:** 15th July 1975/ Gorakhpur
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REFEREES

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