# Curriculum Vitae


## Dr. Amit Kumar Bajhaiya

Assistant Professor,
Department of Microbiology,
School of Life Sciences,
Central University of Tamil Nadu,
Thiruvarur-610005
Tamil Nadu, India

Email: amitkumar@cutn.ac.in, amitbajhaiya@gmail.com
Phone: +91-7499879105
ORCID: https://orcid.org/0000-0002-9912-4278
Google Scholar:https://scholar.google.se/citations?user=E5hc9kAAAAAJ&hl=en&oi=ao


**Research interest:**

Secondary metabolites, Transcriptional engineering of Microalgae, Metabolomics, Sub-cellular proteomics, Carbon concentration mechanism of microalgae, regulation of lipid and carbohydrate biosynthesis, Abiotic stress induced program cell death and Bio-active compounds from Microalgae.

**Academic profile:**

- **Postdoctoral fellow (2018 - Feb 2020)**
  Department of Chemistry, Chemical biological Centre, Umea University, Sweden

- **Postdoctoral fellow (2015 - 2017)**
  Department of plant physiology, Umea Plant Science Center, Umea, Sweden.

- **PhD Student and teaching assistant (2011 - 2015)**
  University of Manchester, United Kingdom.

- **Qualified International English Language Testing Services (IELTS), United Kingdom (2010).**

- **DBT-Project Assistant (2009-2010)**
  CSIR-National Botanical Research Institute, Lucknow, India

- **Qualified Graduate record examination (GRE), USA (2008).**

- **Masters in Science (2005 – 2007)**
  College of life Sciences, Jiwaji University, Gwalior, India.

- **B.Sc. B.Ed. (Four Year Integrated course) (2001-2005)**
  Regional Institute of Education, NCERT, Barkatullah University, Bhopal, India.

**Awards/Honor's:**

- Company of Biologists travel grants, Society for Experimental Biology, United Kingdom (2019)
- Wallenberg foundation travel grant, Wallenberg foundation, Sweden (2019)
- **Inspire Faculty fellowship**, Department of Science and Technology, Govt. of India (2018).
- Young Scientist Travel Award, International Union of Biological Sciences (IUBS), CSIR-National Botanical Research Institute, Lucknow, India (2018).
- **Postdoctoral fellowship, Lawski's Foundation, Sweden** (2017).
- Company of Biologists Travel Grants, Society for Experimental Biology, United Kingdom (2014)
- Faculty of life sciences, research travel grant, University of Manchester, United Kingdom (2014).
- Silver Sponsorship award, Primer Design, United Kingdom (2014).
- Best oral presentation award, International Algal Biotechnology Symposium, Sheffield, United Kingdom (2014).
- Campus Ambassador for Read Cube citation software development program, USA (2013).
- Gold Sponsorship award, Primer Design, United Kingdom (2013).
- Overseas PhD fellowship, Government of India (2011).

**Research grants received:**

- SERB-SRG grant, Government of India (2021-2023). (Role: PI).
- DST- STI hub for SC/ST Communities, Government of India (2021-2024) (Role: Co-PI).
- European Horizon 2020, Research grant for COFRADIC Proteomic analysis, Sweden (2019). (Role: Co-PI).
- Annual Instrument grant (300000 SEK), as co-applicant with Prof. Christiane Funk, Department of Chemistry, Umea University, Sweden (2018). (Role: Co-PI).
- Independent research grant (45500 SEK) from Gunnar and Ruth Björkmans foundation, Sweden (2018). (Role: PI).

**Research grants recently submitted:**

- SERB-CRG, Government of India (2023) (Role: PI)

**Memberships of the Societies:**

- Member of society of experimental biology (SEB), London, United Kingdom.
- Member of Scandinavian Plant Physiology Society, Sweden
- Member of International Society of Environmental Botanists (ISEB), Lucknow, India.

**Reviewer for following journal:**

- BMC Plant biology, BMC (IF:5.2)
- Frontiers in Bioengineering and Biotechnology, Frontiers (IF:6.0)
  Microbiology and Biotechnology, Korean Society for Microbiology and Biotechnology (IF:3.2)
- Molecules, MDPI (IF4.9)
- Energies, MDPI (IF:3.2)
- Bioengineered, Taylor & Francis (IF:6.8)
- The Plant Cell, American Society of Plant Biologists (ASPB) (IF: 11.28).
- Molecules, MDPI (IF: 4.4)
- Sustainability, MDPI (IF: 3.2)
- Antibiotics, MDPI (IF: 4.6)
- Energies, MDPI (IF: 3.1)
- Industrial & Engineering Chemistry Research, Journal of American Chemical Society (IF: 2.5).

- Journal of agronomy and crop science, Wiley's Journal (IF: 2.5).
- Journal of experimental botany (JXB), Oxford University Press (IF: 5.3)
- Scientific African (Elsevier Journal), Next Einstein Forum
- Environmental Sustainability, Springer
- World Journal of Microbiology and Biotechnology, Springer (IF:3.2)
- Vegetos, Spinger (IF: 0.4)

**Editor:**

- Review Editor in Circular Economy (specialty section of Frontiers in Sustainability).

**Publications: (Citations: 690; h-index: 12; i10-index: 14)**

**Research Papers:**

- Kumar, Umesh, Subhisha Raj, Arathi Sreenikethanam, Rahul Maddheshiya, Seema Kumari, Sungsoo Han, Krishan K. Kapoor, Rakesh Bhaskar, **Amit K. Bajhaiya**, and Dharmender K. Gahlot. (2023) "Multi-Omics Approaches in Plant–Microbe Interactions Hold Enormous Promise for Sustainable Agriculture." *Agronomy* 13, no. 7 : 1804. ***corresponding author (IF: 3.7)** https://doi.org/10.3390/agronomy13071804

- Subhisha Raj, Amrutha Sajith, Arathi Sreenikethanam, Swathi Vadlamani, Aiswarya Satheesh, Anurup Ganguly, J. Rajesh Banu, Sunita Varjani, Poornachandar Gugulothu & **Amit K. Bajhaiya** (2023) Renewable biofuels from microalgae: technical advances, limitations and economics, Environmental Technology Reviews, 12:1, 18-36, ***corresponding author (IF: 0.8)** DOI: 10.1080/21622515.2023.2167126

- Arathi Sreenikethanama, Subhisha Raj, Rajesh Banu J, Poornachandar Gugulothu, Sunita Varjani, **Amit K. Bajhaiya*** (2022). Algal lipids for Biofuel production: Strategies, Environmental impacts, Downstream processing and commercialization, *Phytochem Rev* (2022). https://doi.org/10.1007/s11101-022-09824-1 ***corresponding author (IF: 7.9).**

- Arathi Sreenikethanam, Subhisha Raj, Rajesh Banu J, Poornachandar Gugulothu, and **Amit K. Bajhaiya*** (2022). Genetic Engineering of Microalgae for Secondary Metabolite Production: Recent Developments, Challenges, and Future Prospects, Frontiers in Bioengineering and Biotechnology, Vol. 10, 8360-8356. ***corresponding author (IF: 6.1).** https://doi.org/10.3389/fbioe.2022.836056

- Neelam Lahari, Vinoy K Shrivastava, Arathi Sreenikethanam, Subhisha Raj and **Amit K Bajhaiya*** (2022), Interdictory contribution of Vitamin D to prevent corona virus infections, Archives of Food and Nutritional Science; Vol. 6 (1), pp. 073-081. ***corresponding author (IF: 0.8).**https://dx.doi.org/10.29328/journal.afns.1001041

- Poornachandar Gugulothu, RajeshBanu J and Amit K Bajhaiya (2022), Bioactive Compound from Micro Algae and their Anti-Cancer Properties, Biomedical Journal of Scientific & Technical Research, 2022, vol. 42, issue 4, 33928-33931. DOI: 10.26717/BJSTR.2022.42.006799

- Preethi, J. Rajesh Banu, Gopala Krishna kumar, Vinay Kumar Tyagi, **Amit K. Bajhaiya,** Poornachandar Gugulothu, M.Gunasekarana (2022). Biohydrogen production from waste activated sludge through thermochemical mechanical pretreatment, Bioresource Technology, 127301 **(IF: 11.8).** https://doi.org/10.1016/j.biortech.2022.127301

- Poornachandar Gugulothu, Rajesh Banu J and **Amit K Bajhaiya** (2022). Bioactive Compound from Micro Algae and their Anti-Cancer Properties, Biomedical Journal of Scientific & Technical Research, vol. 42 (4), 33928-33931**(IF: 0.06).** DOI: 10.26717/BJSTR.2022.42.006799

- Subhisha Raj, Anusree M. Kuniyil, Arathi Sreenikethanam, Poornachandar Gugulothu, Rajesh Banu Jeyakumar, **Amit K. Bajhaiya***(2021). Microalgae as a Source of Mycosporine-like Amino Acids (MAAs); Advances and Future Prospects, *Int. J. Environ. Res. Public Health* **2021**, *18*(23), 12402; ***corresponding author (IF: 4.6). https://doi.org/10.3390/ijerph182312402.**

- Godvin Sharmila V, Dinesh Kumar M, Arulazhagan Pugazhendi, **Amit Kumar Bajhaiya,** Poornachander Gugulothu & Rajesh Banu J (2021). Biofuel production from Macroalgae: present scenario and future scope, Bioengineered, 12:2, 9216-9238, **(IF: 6.8).** DOI: 10.1080/21655979.2021.1996019

- Ilka N.Abreu, Anna Aksmann, **Amit K. Bajhaiya***, Reyes Benlloch, Mario Giordano, Wojciech Pokora, Eva Selstam, Thomas Moritz (2020). Changes in lipid and carotenoid metabolism in *Chlamydomonas reinhardtii* during induction of CO2-concentrating mechanism: Cellular response to low CO2 stress, Algal Research, Dec 2020; 52:102099. ***corresponding author (IF: 5.2).** https://www.sciencedirect.com/science/article/pii/S221192642030967X

- Carolina Arias, OgonnaObudulu, Xiaoling Zhao, PreetiAnsolia, Suman Paul, JoakimBygdell, Mohammad Pirmoradian, Roman A. Zubarev, Göran Samuelsson, Gunnar Wingsle and **Amit K. Bajhaiya*** (2020) Nuclear proteome analysis of Chlamydomonas with response to CO2 limitation, Algal Research, Jan 2020; 46:101765 . ***corresponding author (IF: 5.2).** https://www.sciencedirect.com/science/article/abs/pii/S221192641930133X

- Chukwuma C. Ogbaga; **Amit K. Bajhaiya**, Sanjay Kumar Gupta (2019). Improvements in biomass production: Learning lessons from the bioenergy plant Sorghum; Journal of Environmental Biology, May 2019, 40 (3). Pp. 400-406. **(IF: 0.7).** https://www.proquest.com/openview/b3763a136715aa888630777aae701083/1?pq-origsite=gscholar&cbl=636374

- **Amit K. Bajhaiya**, Javiera Ziehe Moreira, Jon K. Pittman (2017). Transcriptional engineering of microalgae: prospects for high-value chemicals, Trends in Biotechnology Feb 2017; 35 (2):pp 95-99. **(IF: 17.3).** https://www.sciencedirect.com/science/article/abs/pii/S016777991630083X

- **Amit K. Bajhaiya**, Leo Zeef, Andrew P. Dean, Racheal Webster, Jon K. Pittman (2016). PSR1 is a Global Transcriptional Regulator of Phosphorus Deficiency Responses and Carbon Storage Metabolism in Chlamydomonas reinhardtii, Plant Physiology, Mar 2016; 170 (3) pp.1216-1234. **(IF: 8.0).** https://academic.oup.com/plphys/article/170/3/1216/6114068?login=true

- **Amit K. Bajhaiya**, Andrew P. Dean, William Allwood, Royston Goodacre, Jon K. Pittman (2016). High-throughput metabolic screening of microalgae genetic variation in response to nutrient limitation, Metabolomics 12(9): 1-14. **(IF: 4.7).** https://link.springer.com/article/10.1007/s11306-015-0878-4

- Thomas Driver, **Amit K. Bajhaiya**, J. William Allwood, Royston Goodacre, Jon K. Pittman, Andrew P. Dean (2015). Metabolic responses of eukaryotic microalgae to environmental stress limit the use of FT-IR spectroscopy for species identification. Algal Research, September 2015; 11(0): 148-155. **(IF: 5.2)**. https://www.sciencedirect.com/science/article/pii/S2211926415001599

- Thomas Driver, **Amit K. Bajhaiya**, Jon K. Pittman (2014). Potential of bioenergy production from microalgae. Current Sustainable/Renewable Energy Reports, September 2014; 1(3): 94-103. https://link.springer.com/article/10.1007/s40518-014-0011-8

- A.A. Ibuot and **Amit K. Bajhaiya** (2013). Biodegradation of Crude Oil Sludge Using Municipal Solid Waste as Bulking Agent, Asian Journal of Biological Sciences, 2013; 6 (4); 207-213. https://scialert.net/abstract/?doi=ajbs.2013.207.213

- **Amit K. Bajhaiya**, S. K Mandotra, M.R. Suseela, Kiran Toppo and S. Ranade (2010). Algal Biodiesel: the next generation biofuel for India: A Review. Asian J. Exp. Biol. Sci. 1 (4), 728-739. https://www.semanticscholar.org/paper/ALGAL-BIODIESEL%3A-the-next-generation-biofuel-for-Bajhaiya-Mandotra/4ea6f1e86bc6b1a89b84b02a714de6a390d8e5d4

**Papers in progress:**

- **Amit K. Bajhaiya**, Andrew P. Dean, Royston Goodacre, Jon K. Pittman (2024). Metabolic variations in C. reinhardtii and C. Concordia under various nutrient stresses**.**

- **Amit K. Bajhaiya***, Saul lema and Christiane Funk (2024). Evaluating the role of Metacaspases in program cell death of *chlamydomonas reinhardtii**.***

**Book Chapters:**

- M.K. Anusree, K. Manasa Leela, M. Sreehari, Subhisha Raj, Arathi Sreenikethanam, **Amit K. Bajhaiya** (2023), Marine microalgae: an emerging source of pharmaceuticals and bioactive compounds, In: Ed. Surya Nandan Meena (eds). New Horizons in Natural Compound Research, Elsevier, ***Corresponding author.** https://doi.org/10.1016/B978-0-443-15232-0.00025-4.

- Mukka Pranay Kumar, N. Abirami, S. K. Paromita Bilkis, Ponnasani Kotesh, Arathi Sreenikethanam, Subhisha Raj, **Amit K. Bajhaiya*** (2022), Innovative and Strategic Upgrades in Large-Scale Microalgal Culture Techniques. In: Ed. Prof. Pradeep Verma. (eds). Micro-algae: Next-generation Feedstock for Biorefineries. ***Corresponding author**. DOIhttps://doi.org/10.1007/978-981-19-0793-7_9

- Arathi Sreenikethanam and **Amit Bajhaiya*** (2021), Algae Based Bio-Plastics: Future of Green Economy. In: Ed. Prof. Krzysztof Biernat. (eds). Biorefineries - Vision and Development. ***corresponding author**. DOI: 10.5772/intechopen.100981

- Pushan Bag, PreetiAnsolia, Sachin K. Mandotra, **Amit K. Bajhaiya***; Potential of blue-green algae in wastewater treatment (2019), In: Gupta S., Bux F. (eds) Application of Microalgae in Wastewater Treatment. Springer, Cham. ***corresponding author**. https://link.springer.com/chapter/10.1007/978-3-030-13913-1_17

- AniefonIbuot, Sanjay Gupta, PreetiAnsolia, **Amit K. Bajhaiya***, Heavy metal bioremediation by microalgae: mechanism and application (2019), Microbial Biodegradation of Xenobiotic Compounds, CRC Press/ Taylor & Francis publishing, 57**.** ***corresponding author.** https://www.taylorfrancis.com/chapters/edit/10.1201/b22151-4/heavy-metal-bioremediation-microalgae-aniefon-ibuot-sanjay-kumar-gupta-preeti-ansolia-amit-bajhaiya\

- OlumayowaOsundeko, Preeti Ansolia, Sanjay Gupta, Pushan Bag, **Amit K. Bajhaiya***.

Promises and challenges of growing microalgae in wastewater for biofuel production. (2019), Water Conservation, Recycling and Reuse: Issues and Challenges: Springer, 29-53.***corresponding author.** https://link.springer.com/chapter/10.1007/978-981-13-3179-4_2

- Mayuri Chabukdhara, Sanjay Kumar Gupta, Faiz Ahmad Ansari, **Amit K. Bajhaiya**, Manish Kumar, Bioremediation of Organic Xenobiotics from Wastewater (2019). Microbial Biodegradation of Xenobiotic Compounds, CRC Press/ Taylor & Francis publishing, 111. https://www.taylorfrancis.com/chapters/edit/10.1201/b22151-7/bioremediation-organic-xenobiotics-wastewater-mayuri-chabukdhara-sanjay-kumar-gupta-faiz-ahmad-ansari-amit-bajhaiya-manish-kumar

- **Amit K. Bajhaiya*,** S. K. Mandotra, Archana Ansolia and Amit Barsana (2017). Recent Advances in Improving Ecophysiology of Microalgae for Biofuels. In *Algal Biofuels* (pp. 141-162). Springer International Publishing.***corresponding author.** https://link.springer.com/chapter/10.1007/978-3-319-51010-1_8

- **Amit K. Bajhaiya**, M.R. Suseela, P.W. Ramteke, Approaches and prospectives for algal fuel, (2012) In:"Cellular origin, Life in extreme habitats and astrobiology" (Cole) Book series, Springer, Germany. https://link.springer.com/chapter/10.1007/978-94-007-5110-1_3

- **Amit K. Bajhaiya**, M. R. Suseela, P. W. Ramteke. Bio-ethanol – The sustainable fuel for tomorrow from the residues of today (2012), Energy conservation: Issues and Challenges, New Scientific Publisher, New Delhi India.

**Presentation at conferences:**

- Arathi Sreenikethanam, Subhisha Raj, **Amit K. Bajhaiya*,** (2023). Effect of abiotic stress on synthesis of photoprotective compounds in microalgae, Emerging Trends in Biotechnology and Bioeconomy ICEBB-2023, organized by Department of Biotechnology Manonmaniam Sundaranar University Tirunelveli, Tamil Nadu.

- Subhisha Raj, Arathi Sreenikethanam, **Amit K. Bajhaiya***, (2023) Genetic engineering of microalgae for enhanced polyphosphate storage: An approach towards producing eco-friendly phosphate biofertilizer. Emerging Trends in Biotechnology and Bioeconomy ICEBB-2023, organized by Department of Biotechnology Manonmaniam Sundaranar University Tirunelveli, Tamil Nadu.

- Subhisha Raj, Arathi Sreenikethanam, **Amit K. Bajhaiya** (2022) Metabolic engineering of microalgae to enhance vitamin D3 synthesis for food fortification. International Conference on Advanced Biology 2022 (ICAB 2022), Dated: February 23-25, 2022, Organized by: Inter University Centre for evolutionary and integrative biology (iCEIB), University of Kerala.

- Arathi Sreenikethanam, Subhisha Raj, **Amit K. Bajhaiya** (2022) Metabolic engineering of microalgae for the production of UV protective compounds. International Conference on Advanced Biology 2022 (ICAB 2022), Dated: February 23-25, 2022, Organized by: Inter University Centre for evolutionary and integrative biology (iCEIB), University of Kerala.

- Subhisha Raj, Arathi Sreenikethanam, **Amit K. Bajhaiya*** (2021), Transcriptional engineering of microalgae for the production of carbon storage metabolites. 3rd International Conference on Renewable Energy, Sustainable Environmental and Agricultural Technologies (i-RESEAT-2021)" on December 22-23, 2021 at Virtual (online) mode from Maejo University, Chiang Mai

City, Thailand.

- **Amit K. Bajhaiya and Christiane Funk** (2019), Role of metacaspases in programmed cell death of the green algae Chlamydomonas reinhardtii, New Phytologist next generation scientists, O'Brien Centre for Science, University College Dublin, 22–25 July 2019, Ireland

- **Amit K. Bajhaiya**, Suman Paul, Carolina Arias Gomez, Gunnar Wingsle, Göran Samuelsson (2016). Identification of novel transcription factors regulating carbon-concentrating mechanism (CCM) in *Chlamydomonas reinhardtii*. 13th Nordic Photosynthesis Congress, held in Copenhagen from 25 to 28 October 2016.

- **Amit K. Bajhaiya**, Suman Paul, Göran Samuelsson (2016). Precise determination of thylakoid pH by a novel Red Fluorescent Protein – challenges and achievements. European Networks Conference on Algal and Plant Photosynthesis, held in Malta from 26th to 29th April 2016.

- **Amit K. Bajhaiya**, Andrew P. Dean, Nick Rattray, Royston Goodacre, Jon K. Pittman (2014). Identifying nutrient regulators of lipid and starch biosynthesis under nitrogen and phosphorus stress in the microalgae Chlamydomonas reinhardtii. International Bioenergy Conference, Manchester, UK.

- **Amit K. Bajhaiya**, Leo Zeef, Andrew P. Dean, Racheal Webster, Jon K. Pittman (2014). Identifying nutrient regulators of lipid and starch biosynthesis in the microalgae Chlamydomonas reinhardtii. The 4th International Conference on Algal Biomass, Biofuels and Bioproducts, Santa Fe Convention Center, Santa Fe, New Mexico, USA.

- **Amit K. Bajhaiya**, Leo Zeef, Andrew P. Dean, Rachael Webster, Jon K. Pittman (2014). Nutrient regulators of lipid and starch biosynthesis in the microalgae Chlamydomonas reinhardtii. International Algal Biotechnology Symposium, Sheffield, UK.

- **Amit K. Bajhaiya**, Andrew P. Dean, William Allwood, Royston Goodacre, Jon K. Pittman (2012). High throughput metabolic screening of microalgae cultivation conditions and genetic variation using FTIR spectroscopy. 2nd International Conference on Algal Biomass, Biofuels and Bioproducts, San Diego, USA.

- **Amit K. Bajhaiya**, Andrew P. Dean, William Allwood, Royston Goodacre, Jon K. Pittman (2012). Faculty of Life Sciences, Research Symposium, University of manchester, UK.

- **Amit. K. Bajhaiya**, M.R. Suseela, Pankaj Kumar, S.K. Mandotra, Kiran Toppo and Poonam Singh (2010). Characterization of algal oil for biofuel production. Fourth International Conference on Plants and Environmental Pollution, NBRI, Lucknow, India.

- **Amit K. Bajhaiya**, M.R. Suseela (2009), Next Generation Fuels - Algal Biofuel. National conference on Biotechnological approaches to alternate energy, organized by IIT Chennai, India.

**Invited talks:**

- Delivered an invited talk on "molecular cloning techniques" at the department of zoology, Govt. K.R. G P.G.(Autonomous) College Gwalior (M.P.) on the 22nd of January 2023.

- Resource person for online refresher course in Nano biochemistry and bioinformatics organized by HRDC, Osmania university, Telangana (2022).

- Delivered an invited talk on "Bioengineering and Metabolite production: the saga of Algal industries" at National Seminar on Environmental Stress and Its Management (ESIM-2023) 16-17 February 2023, organised by the department of zoology, Govt. K.R. G P.G.(Autonomous) College Gwalior (M.P.).

- Resource person for technical session on “Research Proposal Writing” in National Webinar on “Scientific/Research Paper Writing” organised by department of microbiology, Central University of Tamil Nadu (26th February 2022).

- Microscopy and its application in research, organized by department of Zoology, Govt. college, Raghogarh, Distt. Guna, M.P. (dated: 24th December 2021).

- Transcriptional engineering of *Chlamydomonas reinhardtii* for the production of carbon storage metabolites, The 3rd International Conference on Renewable Energy, Sustainable Environmental & Agri-Technological and Innovation, Chiang Mai, Thailand. (22nd & 23rd December 2021).

**Faculty Development Programs:**

- Participated in refresher course in life sciences organised by UGC-HRDC, Osmania university, Telangana (2022).
- Participated in faculty orientation/Induction program organized by UCG-HRDC centre of Mizoram Central University, Mizoram (2021).
- Participated in webinar on national education policy organized by UCG-HRDC centre of Mizoram Central University, Mizoram (2021).

**Training / Workshops attended:**

- RNA sequencing data analysis, SciLife Labs, Sweden (2019).
- Vibrational spectroscopy user license course, Umea University, Sweden (2018).
- Practical Course on rapid Cloning, Protein Expression and Purification, Umea University, Sweden (2017).
- Planning your publications for Life Scientists, University of Manchester (2014).
- Metagenomics: data clean up using Galaxy software, Faculty of life sciences, University of Manchester (2014).
- Microarray Data Analysis and Next Generation Sequencing (NGS) Data Analysis using PARTEK software, Faculty of life sciences, University of Manchester (2014).
- Microarray or Sequencing Data analysis using Galaxy,University of Manchester, UK (2013)
- Experimental design and Statistics using SPSS and R at University of Manchester, UK (2013)
- Biosafety in the Laboratory, Faculty of life sciences, University of Manchester (2013).
- Radiation Safety Awareness, Faculty of life sciences, University of Manchester (2013).
- Working with Biological Agents, Faculty of life sciences, University of Manchester (2012).
- Next generation sequencing and qPCR, Faculty of life sciences, University of Manchester (2012).
- Plagiarism Prevention in publications, University of Manchester, UK (2011).
- Reference management with Endnote, at University of Manchester, UK (2011).

**Public engagements (Participated or Organized):**

- Demonstrator for Plant Fascination Day, Umea Plant Science Centre, Sweden (2019)

- Voluntary for love food fests, Manchester Museum, University of Manchester, UK (2014)
- Demonstrator for DNA isolation workshop, Science star week, University of Manchester, UK (2014)
- Demonstrator for A Question of Taste and Hands-on Molecular Genetics, Nowgen genetic center, Manchester, UK (2014).
- Demonstrator for Aqua science workshop, FLS, University of Manchester, UK (2013)
- Demonstrator for Faculty of life sciences open day, University of Manchester, UK (2013).

**Other achievements:**

- Pre-senior UN information test certificate, United School Organization, India.
- Senior general knowledge test certificate, United School Organization, India.
- First rank at district level in National Chinthana science Exam, ChinthanaPrakashana, India.
- Qualified NCC 'C' Certificate.
- Vice president of regional institute of Education (N.C.E.R.T), Bhopal, India.