Curriculum Vitae

Name: **Dr. Amit Chawla**
Date of Birth: 21/07/1976
Institute: CSIR-Institute of Himalayan Bioresource Technology
Department: Environmental Technology Division
Address: Holta, Palampur (H.P.) 176061
Email: amitchawla@ihbt.res.in
Phone: 9418076217 / 01894233339 Ext.437
Current Position Principal Scientist & Associate Professor, AcSIR
Administrative Responsibility: In-charge, Centre for High Altitude Biology, Tandi, District Lahaul and Spiti, H.P.

(II) Education Details:

Degree	Institution & Location	Year	Major Subject
Ph.D. Botany	Guru Nanak Dev University, Amritsar, India	2009	Vegetation Ecology & Remote Sensing
PGDCA	Indira Gandhi National Open University, N. Delhi	2006	Computer Applications
M.Sc. (H.S.) Botany	Guru Nanak Dev University, Amritsar, India	2000	Botany & Remote Sensing
B.Sc. (H.S.) Botany	Guru Nanak Dev University, Amritsar, India	1998	Botany & Seed Technology

Ph.D. Dissertation: Landscape Ecology of Kinnaur Region of Western Himalaya Using Remote Sensing (Supervisor: Late Prof. Dr. A.K. Thukral)

(III) Research Focus & Expertise: I primarily study the High Altitude Vegetation - Characterizing biodiversity patterns, conservation of threatened plants, understanding adaptation strategies, bioprospection and studying climate change impacts
Technical Expertise: Ecological Studies, Remote Sensing, Thermography, Ecological Niche Modelling, Statistical Multivariate Analysis in R, Eco-physiology & Functional Ecology

(IV) Employment Details (Post Ph.D.):

Sl No.	Institution Place	Position	From(Date)	To (date)
1	CSIR-IHBT, Palampur, HP	Principal Scientist	28/04/2019	Till date
2	CSIR-IHBT, Palampur, HP	Senior Scientist	28/04/2015	27/04/2019
3	CSIR-IHBT, Palampur, HP	Scientist	28/04/2011	27/04/2015
4	-Do-	Scientist Fellow	29/06/2009	27/04/2011
5	Department of Biosciences, HPU, Shimla	D.S. Kothari Post Doc Fellow	20/02/2009	27/06/2009

(V) Honours/Awards

- Received **State Level Recognition for Excellent Contributions in Conservation of Biodiversity** for the year 2024-25; by HP State Biodiversity Board, Shimla
- Received **Distinguished Alumnus Award 2025** by Guru Nanak Dev University, Amritsar on 10 Nov 2025
- Awarded **Dr. D.S. Kothari Post-Doctoral Fellowship** by University Grants Commission (UGC), New Delhi, India on 24th Oct, 2008.

- Successfully competed in '**National Eligibility Test**' conducted by CSIR-UGC in year 2000 and 2001.

(VI) Publications:

Total Number of Research Publications in referred journals : 45
Total Number of Book Chapters : 04
Books/Compendiums : 01
Conference Proceedings : 02

Recent Publications:

1. Hopak, N.E. and Chawla, A*. 2025. **Key eco-physiological leaf traits suggest a moderate to high level of thermal tolerance of alpine plants in the Western Himalaya.** *Front. Plant Physiol.* 3:1652412. https://doi.org/10.3389/fphgy.2025.1652412
2. Sharma, M.K. and Chawla, A*. 2025. **Elevation-dependent effects of early snowmelt on species and functional diversity in Himalayan alpine plant communities**. *Climatic Change* 178:180. https://doi.org/10.1007/s10584-025-04006-2 IF 4.8.
3. Sharma, M.K. and Chawla, A*. 2025. **Alpine plant species advance green-up but delay leaf senescence in response to experimental early snowmelt**. *Plant Biology* 178:180. https://doi.org/10.1111/plb.70121 IF 3.6.
4. Thakur, D. and Chawla, A.* 2025. **Aspect outweighs elevation in influencing plant functioning at high elevations of Himalaya.** *Plant Ecology* https://doi.org/10.1007/s11258-025-01567-1 IF 1.7.
5. Bhatt, A. and Chawla, A*. 2024. **Beekeeping with local resources by Pangwals: a high altitude tribal community of Western Himalaya**. *Beeworld* (Accepted). https://doi.org/10.1080/0005772X.2025.2538985
6. Bhatt, A. and Chawla, A*. 2024. **Distribution of plant species along the elevation gradient in Pangi, a high altitude and remote eco-region in Western Himalaya, India.** *Journal of Mountain Science* 21(11): 3739-3753. https://doi.org/10.1007/s11629-023-8258-4
7. Ram, B. and Chawla, A*. 2024. **Shrubs exhibit competitive interactions with herbaceous plants and shape community assemblage and functional composition in the alpine western Himalaya.** *Journal of Vegetation Science*, 35, e13269. DOI: https://doi.org/10.1111/jvs.13269 IF 2.8.
8. Rajlaxmi, A., Chawla, A. and Kumar, M*. 2024. **Predicting the current and future potential habitat of *Taxus* species over Indian Himalayan Region using MaxEnt model.** *Tropical Ecology*, https://doi.org/10.1007/s42965-024-00365-6
9. Mehta, N. and Chawla, A*. 2024. **Eco-physiological trait variation in widely occurring species of Western Himalaya along elevational gradients reveals their high adaptive potential in stressful conditions.** *Photosynthesis Research* 159:29-59. https://doi.org/10.1007/s11120-023-01071-5 IF3.7.
10. Sharma, M.K., Hopak, E. and Chawla, A*. 2024. **Alpine plant species converge towards adopting elevation-specific resource-acquisition strategy in response to experimental early snow-melting.** *Science of the Total Environment* 907 (2024):167906. IF 9.8
11. Sharma, M.K. and Chawla, A.* 2024. **Aftermath of damage: Impact of short-term climatic extreme event on alpine plant communities.** *ENVIS Bulletin on Himalayan Ecology*, Vol. 31.
12. Gulati, A., Thakur, R., …Chawla, A., …Chauhan, P.S. 2024. **Broad-spectrum PGPR strain of Halotalea alkalilenta from the Cold deserts of the Indian trans-himalayas showing stress-tolerance to environmental factors and multiple growth- promoting traits corroborated by genomic analysis.** *Plant Growth Regulation* (2024) 104:319–330. IF3.5
13. Gulati, A., Thakur, R.…Chawla, A.,…Chauhan, P.S., Nautiyal, C.S. 2024. **Fostering climate-resilient agriculture with ACC-deaminase producing rhizobacterial biostimulants from the cold deserts of the Indian Himalayas.** *Journal of Environmental Management* 371 (2024) 123075. IF8.0
14. Choudhary, A., Shekhawat, D., Pathania, J., Sita, K., Sharma, S., Chawla, A. and Jaiswal, V*. 2024. **Exploring DNA barcode for accurate identification of threatened *Aconitum* L. species from Western Himalaya.** *Molecular Biology Reports*. 51,75. IF2.8.

15. Verma, A., Chawla, A., Singh, C.P. and Kumar, A*. 2023 **Compositional change in vascular plant diversity in the alpine mountainous region of Indian north-western Himalaya indicate effects of warming.** *Biodiversity and Conservation* IF4.296.
16. Sharma, M.K., Ram, B. and Chawla, A*. 2023. **Ensemble modelling under multiple climate change scenarios predicts reduction in highly suitable range of habitats of *Dactylorhiza hatagirea* (D. Don) Soo in Himachal Pradesh, western Himalaya.** *South African Journal of Botany* 154:203-218. IF3.1.
17. Kumari, V., Joshi, R., Chawla, A. and Kumar, D*. 2022. **Metabolome analysis of *Dactylorhiza hatagirea* (D. Don) Soo reveals a significant antioxidant and nutritional potential of its tubers.** *South African Journal of Botany*, 150:431-442. IF3.1.
18. Rathore, N., Kumar, P., Mehta, N., Swarnkar, M.K., Shankar, R*. and Chawla, A*. 2022. **Time-series RNA-Seq transcriptome profiling reveals novel insights about cold acclimation and de-acclimation processes in an evergreen shrub of high altitude.** *Scientific Reports* 12:1553.
19. Kumar*, R., Joshi, R., Kumar, R., Srivatsan, V., Satyakam, Chawla, A., Patial V. and Kumar, S. 2022. **Nutritional quality evaluation and proteome profile of forage species of Western Himalaya.** *Grassland Science*, pp1-12. DOI: 10.1111/grs.12357. IF1.44
20. Rathore, N., Thakur, D., Kumar, D., Chawla, A.* and Kumar, S. 2021. **Time-series eco-metabolomics reveals extensive reshuffling in metabolome during transition from cold acclimation to de-acclimation in an alpine shrub.** *Physiologia Plantarum* 173(4):1824-1840. IF5.081
21. Singh, L., Thakur, D., Sharma, M.K. and Chawla, A*. 2021. **Dynamics of leaf litter decomposition in the timberline zone of western Himalaya.** 111 (2021) 103715. IF1.93.
22. Thakur, D., Rathore, N., Sharma, M.K., Parkash, O. and Chawla, A*. 2021. **Identification of ecological factors affecting the occurrence and abundance of *Dactylorhiza hatagirea* (D.Don) Soo in the Himalaya.** *Journal of Applied Research on Medicinal and Aromatic Plants*. 20 (2021) 100286.
23. Chawla, A., Kumar, A., Warghat, A., Singh, S., Bhushan, S., Sharma, R.K., Bhattacharya, A. and Kumar, S.*2020. **Approaches for Conservation and Improvement of Himalayan Plant Genetic Resources.** In: Tuteja, N., Tuteja, R., Passricha, N. and Saifi, S. (Eds.). *Advancement in Crop Improvement Techniques*. Woodhead Publishing, Elsevier Inc.
24. Thakur, D., Singh, L. and Chawla, A*. 2020. **Reliability of leaf functional traits after delayed measurements.** *Australian Journal of Botany*. IF 1.64.
25. Dhiman, N., Sharma, N.K., Thapa, P., Sharma, I., Swarnkar, M.K., Chawla, A., Shankar*, R. and Bhattacharya*, A. 2019. ***De novo* transcriptome provides insights into the growth behaviour and resveratrol and trans-stilbenes biosynthesis in *Dactylorhiza hatagirea* - An endangered alpine terrestrial orchid of western Himalaya.** *Scientific Reports*, 9:13133. DOI: IF 4.122
26. Thakur, D. and Chawla*, A. 2019. **Functional diversity along elevational gradients in the high altitude vegetation of the western Himalaya.** *Biodiversity and Conservation*, 28:1977–1996. IF 3.142
27. Thakur, D., Rathore, N. and Chawla*, A. 2019**. Increase in light interception cost and metabolic mass component of leaves are coupled for efficient resource use in the high altitude vegetation.** *Oikos*. 128: 254–263. IF3.71.
28. Rathore, N., Thakur, D. and Chawla*, A. 2018. **Seasonal variations coupled with elevation gradient drives significant changes in eco-physiological and biogeochemical traits of a high altitude evergreen broadleaf shrub, *Rhododendron anthopogon*.** *Plant Physiology and Biochemistry* 132:708-719. IF3.404
29. Thakur, D., Rathore, N., Sharma, M.K. and Chawla*, A. 2018**. Enhanced reproductive success revealed key strategy for persistence of devastated populations in Himalayan food deceptive orchid, *Dactylorhiza hatagirea*.** *Plant Species Biology*, 33:191-202. IF2.07

(VII) Research Project(s): As PI: 13; As Co-PI:12

A list of recent research projects executed is provided below: -

SN	Title of Project	Funding Agency	From Date	To Date	Approved Cost (₹ lakhs)
1	Assessing the Impact of Climate Change on Ecosystem Services Provided by Sub-Alpine Forests in Tribal Areas of Himachal Pradesh **(as PI)**	DEST&CC, Shimla	2025	2027 (02 years)	8.14
2	Study of ecosystem responses to early snow melting in western Himalayan alpine environment **(as PI)**	ANRF (Prev SERB) (Core Research Grant)	30.06.2023	29.06.2026 (03 years)	Rs.38.34302
3	Elucidation of plant responses to high UV radiation and low temperature stress at high altitudes in *Juniperus polycarpos* K. Koch, a highly adapted woody evergreen species of Trans-Himalaya **(as PI)**	ANRF Special Grant: Organisms in extreme environment	25.05.2023	21.05.2026 (03 years)	Rs.44.50464
4	Collection, conservation and characterization of *Fritillaria cirrhosa* germplasm **(as Co-PI)**	NMPB	Project Sanctioned	Yet to commence (03 years)	Rs.32.765
5	Preparation and updating People's Biodiversity Register (PBR) for selected Biodiversity Management Committees (BMCs) of H.P. **(as PI)**	HPSBB, Shimla	02.01.2024	30.06.2025 (1.5 years)	15.76
6	CSIR Jigyasa 2.0 Programme: Virtual Lab Integration**(as Co-PI)**	CSIR	01.04.2022	31.03.2026 (04 years)	188.82
7	Assessment of Carrying Capacity of Eco-sensitive Zone (ESZ) of Renukaji Wildlife Sanctuary, District Sirmaur, Himachal Pradesh **(as PI)**	DEST&CC, Shimla	30.10. 2023	13.06.2024	Rs.13.50173
8	Conservation of threatened plant species of India **(as PI)**	CSIR	2020	2023 (03 years)	Rs.299.72
9	Exploring the role of reactive oxygen and dicarbonyl species detoxification in adaptation of *Picrorhiza kurroa* to cold and high altitudes **(as Co-PI)**	CSIR-EMR Grant	01/07/2020	31/12/2023 (03 years)	35.0
10	Preparation of People's Biodiversity Register (PBR) at Panchayat level for Himachal Pradesh **(as PI)**	HPSBB	2020	2022 (03 years) Extension applied for	Rs.17.0
11	Preparation of People's Biodiversity Register (PBR) of seven blocks of Kangra District, Himachal Pradesh (funded by Himachal Pradesh State Biodiversity Board (HPSBB), Shimla) **(as PI)**	HPSBB	2020	2023 (03 years) Extension applied for	Rs.9.1
12	Conservation and sustainable resource generation of high	CSIR	04/01/2018	03/31/2020 (02 years)	Rs.846.56

	altitude bioresources at CSIR-Centre for High Altitude Biology **(as PI)**				
13	Understanding the nature of alpine timberlines of Himalaya: integrating ecological and scenario studies for assessing the impact of climate change **(PI)**	National Mission on Himalayan Studies	04/01/2018	12/31/2021 (3.5 years)	Rs.48.4522
14	Characterisation patterns and processes of Alpine Ecosystem in Indian Himalaya with special emphasis to Himachal Pradesh **(As Co-PI)**	SAC (ISRO), Ahmedabad	01/05/2019	30/04/2023 (03 years)	Rs.25.66
15	CSIR Mission Phytopharma Project Vertical C, "Captive cultivation of selected high value rare, engendered and threatened (RET) medicinal plant species" **(as PI)**	CSIR	01/10/2017	31/03/2020 (03 years)	Rs.1060.27
16	CSIR Mission Aroma Project **(as Co-PI)**	CSIR	01/10/2017	31/03/2020 (03 years)	Rs.1555
17	Ex-situ conservation and development of gene bank of Commercially important threatened medicinal plants in the high altitude areas, HP **(As Co-PI)**	NMHS	10/01/2019	30/09/2022 (03 years)	Rs.68.6176
18	Two Short duration projects: (i) Sustainable harvest and value addition protocols for 5 bulk traded and high value medicinal plant species (ii) Trade chain, trade pattern and economic valuation of 15 RET valuable medicinal plant species **(as PI)**	HIMCOSTE Shimla	08/08/2018	31/12/2019	Rs.7.0

(VIII) Students supervised: **Ph.D.** 07 (completed); 05 (In-Process)
Trainings provided: M.Sc. Dissertations: 10; B.Tech. Trainings: 05
Supervised and trained ~20 Project Fellows till date

(IX) Professional Bodies Memberships:

- Life Member, National Environmental Science Academy
- Life Member, The Society for Integrative Biosciences
- Life Member, Indian Remote Sensing Society
- Member, International Society of Tropical Ecology

(X) Teaching:

- Teaching Ph.D. Courses in Academy of Scientific and Innovative Research (AcSIR) since 2014: (1) Biostatistics (2) Research Methodology (3) Plant Conservation and Reproductive Biology (4) Bioresources and Biodiversity
- Worked as a Lecturer, Botany at Govt. Degree College, Ghumarwin, Distt. Bilaspur, (H.P.), India for the time period: 14th Nov. 2000 to 28th Feb. 2001, on *ad hoc* basis.
- Worked as a Lecturer, Botany at Doaba College, Jalandhar (PB), India for the time period: 2nd Aug, 2001 to 20th Feb, 2002, on *ad hoc* basis.

(XI) Major Events Organized/Coordinated (Last 05 years)**:**

- Coordinated **International Workshop entitled "High Elevation Plant Adaptation in a Changing Climate (HEPACC)**, fully sponsored by European Molecular Biology Organization (EMBO), Germany for Euros 51,500 held at CSIR-IHBT from 25-28 Feb 2025.
- Coordinated SERB (Now ANRF) sponsored national level "**Hands-on Training on Plant Physiological Techniques**: Two Days Workshop for College Teachers" organized at CSIR-IHBT during 02-03 June 2025.
- Organised meeting of the **DST-SERB's PAC-Mathematical Sciences** as Convener from 26-27 Oct 2023.
- Coordinated a virtual Industry-Academia connect **(iConnect) event** which was organized on 22/07/22 from 02.00-4.00 PM. The event was entitled "**Climate change and its impacts on various sectors and ecosystems (iCEN-58)**". This was jointly coordinated by CSIR-IHBT and IITM, Pune (Co-coordinator: Dr. Sachin D. Ghude). Leading Researchers (Dr. M.K. Behera, IIT Kharagpur and Dr. Mukhopadhyay, IITM, Pune) and Industry Stalwarts (Sh. Vikas Aswale, GM, Suzlon Energy; Sh. Abhinav Saxena, Dy GM, Adani Green Energy Ltd.; Sh. Ronak Sutaria, Respirer Living Sciences, Sh. Yogesh Patil, CEO, Skymet etc.) took part in a discussion on the requirements of Industry and the expectations from climate change research in different sectors and ecosystems.
- Coordinated a training programme entitled "**Comprehensive training on sustainable harvesting, processing and sustainable cultivation of Medicinal and Aromatic Plants (MAPs) in the high altitude region**" for farmers of tribal region of Lahaul and Spiti organized on 28-29 September 2022. This programme was funded by Forest Department, Lahaul Forest Division under the SECURE Himalaya project.
- Coordinated the **visit of Dr. John D. All, Fulbright Specialist to CSIR-IHBT**, CeHAB and to our LTER sites in the high altitude region (11-28 May 2022). This Project was approved by United States – India Educational Foundation (USIEF) for Fulbright Specialist Program to host to host Fulbright Specialist Prof. John David All (Project ID: FSP-P005141, letter dated 03/01/2020).
- Participated as Expert and Panel Member (by invitation) in an online live programme **Science Talk** organized by India Science in collaboration with Vigyan Prasar for popularization of science in India, on 01/10/2021.
- Coordinator of **Nayudamma Memorial Cricket Tournament 2019**, a national level invitational cricket tournament organized by CSIR for various ministries and departments with scientific research focus