

## 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  
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**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.):

SI 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

- 1. Awarded Dr. D.S. Kothari Post-Doctoral Fellowship by University Grants Commission (UGC), New Delhi, India on 24th Oct, 2008.
- 2. 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 : 34

Total Number of Book Chapters : 04

Books/Compendiums : 01

Conference Proceedings : 02

Selected Publications:

1. Sharma, M.K., Hopak, E. and Chawla, A\*. 2023. **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
2. 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.
3. 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.
4. 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.
5. 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.
6. 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
7. 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
8. 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.
9. 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.
10. 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. Thakur, D., Singh, L. and Chawla, A\*. 2020. **Reliability of leaf functional traits after delayed measurements.** *Australian Journal of Botany*. IF 1.64.
11. 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
12. 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
13. 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.
14. 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

15. 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
16. Kumar, V., Sharma, A., Dhunna, G., Chawla, A., Bhardwaj, R. and Thukral, A.K. 2017. **A tabulated review on distribution of heavy metals in various plants**. *Environ Sci Pollut Res*. 24(3): 2210-2260. IF2.194
17. Kumar, A., Lal, B., Rajkumar, S., Chawla, A. and Kaushal, R. 2013. **Landscape Mapping and Tree Diversity Assessment of Pangri Valley: A Remote Tribal Area of Himachal Pradesh in Western Himalaya, India**. *International Journal of conservation Science*. 4(4): 503-508.
18. Kumari, A., Sangta, R. and Chawla, A. 2013 **Diversity, Distribution Pattern and Threat Status of Pteridophytic Flora in Shikari Devi Wild Life Sanctuary, Himachal Pradesh, India**. *Journal of Biodiversity Management & Forestry*, 2:4.
19. Chawla, A\*, Yadav, P.K., Uniyal, S.K., Kumar, A., Vats, S.K., Kumar, S. and Ahuja, P.S. 2012. **Long-term ecological and biodiversity monitoring in the western Himalaya using satellite remote sensing**. *Current Science* 102(8):1143-1156. IF0.756
20. Chawla, A\*, Parkash, O., Sharma, V., Rajkumar, S., Lal, B., Gopichand, Singh, R.D. and Thukral, A.K. 2012. **Vascular plants, Kinnaur, Himachal Pradesh, India**. *Checklist* 8(3):321-348. IF0.4.

**(VII) Research Project(s):** As PI: 12; 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	Study of ecosystem responses to early snow melting in western Himalayan alpine environment <b>(as PI)</b>	SERB, DST (Core Research Grant)	30.06.2023	29.06.2026 (03 years)	Rs.38.34302
2	Elucidation of plant responses to high UV radiation and low temperature stress at high altitudes in <i>Juniperus polycarpos</i> K. Koch, a highly adapted woody evergreen species of Trans-Himalaya <b>(as PI)</b>	SERB, DST Special Grant: Organisms in extreme environment	25.05.2023	21.05.2026 (03 years)	Rs.44.50464
3	Collection, conservation and characterization of <i>Fritillaria cirrhosa</i> germplasm <b>(as Co-PI)</b>	NMPB	Project Sanctioned	Yet to commence (03 years)	Rs.32.765
4	Assessment of Carrying Capacity of Eco-sensitive Zone (ESZ) of Renukaji Wildlife Sanctuary, District Sirmaur, Himachal Pradesh <b>(as PI)</b>	DEST&CC, Shimla	30.10.2023	13.06.2024	Rs.13.50173
5	Conservation of threatened plant species of India <b>(as PI)</b>	CSIR	2020	2023 (03 years)	Rs.299.72
6	Preparation of People's Biodiversity Register (PBR) at Panchayat level for Himachal Pradesh <b>(as PI)</b>	HPSBB	2020	2022 (03 years) Extension applied for	Rs.17.0
7	Preparation of People's Biodiversity Register (PBR) of seven blocks of Kangra District, Himachal Pradesh (funded by	HPSBB	2020	2023 (03 years) Extension applied for	Rs.9.1

	Himachal Pradesh State Biodiversity Board (HPSBB), Shimla) <b>(as PI)</b>				
8	Conservation and sustainable resource generation of high altitude bioresources at CSIR-Centre for High Altitude Biology <b>(as PI)</b>	CSIR	04/01/2018	03/31/2020 (02 years)	Rs.846.56
9	Understanding the nature of alpine timberlines of Himalaya: integrating ecological and scenario studies for assessing the impact of climate change <b>(PI)</b>	National Mission on Himalayan Studies	04/01/2018	12/31/2021 (3.5 years)	Rs.48.4522
10	Characterisation patterns and processes of Alpine Ecosystem in Indian Himalaya with special emphasis to Himachal Pradesh <b>(As Co-PI)</b>	SAC (ISRO), Ahmedabad	01/05/2019	30/04/2023 (03 years)	Rs.25.66
11	CSIR Mission Phytopharma Project Vertical C, "Captive cultivation of selected high value rare, engendered and threatened (RET) medicinal plant species" <b>(as PI)</b>	CSIR	01/10/2017	31/03/2020 (03 years)	Rs.1060.27
12	CSIR Mission Aroma Project <b>(as Co-PI)</b>	CSIR	01/10/2017	31/03/2020 (03 years)	Rs.1555
13	Ex-situ conservation and development of gene bank of Commercially important threatened medicinal plants in the high altitude areas, Himachal Pradesh <b>(As Co-PI)</b>	NMHS	10/01/2019	30/09/2022 (03 years)	Rs.68.6176
14	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 <b>(as PI)</b>	HIMCOSTE Shimla	08/08/2018	31/12/2019	Rs.7.0

**(VIII) Ph.D. candidates supervised:** 02 (completed); 06 (In-Process)

Trainings provided: M.Sc. Dissertations: 05; B.Tech. Trainings: 05

**(IX) Professional Bodies Memberships:**

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

**(X) Teaching:**

- Worked as a Lecturer, Botany at Govt. Degree College, Ghumarwin, Distt. Bilaspur, (H.P.), India for the time period: 14<sup>th</sup> Nov. 2000 to 28<sup>th</sup> Feb. 2001, on *ad hoc* basis.
- Worked as a Lecturer, Botany at Doaba College, Jalandhar (PB), India for the time period: 2<sup>nd</sup> Aug, 2001 to 20<sup>th</sup> Feb, 2002, on *ad hoc* basis.