SANTOSH K. SHAH, SCIENTIST 'D'

Birbal Sahni Institute of Palaeosciences (BSIP), 53 University Road, Lucknow – 226 007, Uttar Pradesh, India. *E-mail:* santoshk.shah@gmail.com ; santoshkumar_shah@bsip.res.in *Phones:* +91 (522) 2742927 (*Off.*); +91 9451246758 (*Cell*) *Fax:* +91 (522) 2740485 (*Off.*) *Personal webpage:* http://santosh-shah-quaternary-bsip.strikingly.com *Office webpage:* http://www.bsip.res.in/skshah.html



EDUCATION:

2007	Ph.D in Botany Birbal Sahni Institute of University of Lucknow <i>Thesis Advisor</i> : Dr. Ama <i>Thesis Title</i> : Analysis of Western Himalaya dur	f Palaeobotany, Lucknow, India and Department of Botany, , Lucknow, India Ilava Bhattacharyya, BSIP, Lucknow, India climatic changes in Northeast Himalaya and its comparison with ing Late Quaternary	
2001	M.Sc in Botany University of North Ber	ngal, Darjeeling, West Bengal, India	
1998	B.Sc in Botany (Honou Kalimpong College, Ka	rs), Zoology and Chemistry limpong, West Bengal, India	
2009	Professional course in BSIP, Lucknow in colla	Geology (April–July) boration with Palaeontological Society of India, Lucknow	
2008	Diploma in French University of Lucknow	, Lucknow, India	
2007	Proficiency in French University of Lucknow, Lucknow, India		
1999	Diploma in Computer Education Aptech Computer Education, Kalimpong, West Bengal, India		
1999	Diploma in Environment Management and ISO 14000/14001 National Institute of Labour And Management (NILEM) Adyar, Chennai, India		
APPOINTMENTS:			
Jan. 1,	2017 – Till date	Scientist 'D' , Birbal Sahni Institute of Palaeosciences, Lucknow, India	
Jan. 1,	2013 – Dec. 31, 2016	Scientist 'C', Birbal Sahni Institute of Palaeosciences, Lucknow,	

Sep. 15, 2008 – Dec. 31, 2012 Scientist 'B', Birbal Sahni Institute of Palaeobotany, Lucknow, India

Mar. 29, 2007 – Sep. 14, 2008	Birbal Sahni Research Associate, Birbal Sahni Institute of
	Palaeobotany, Lucknow, India

India

Sep. 1, 2001 – Feb. 28, 2002	Project Assistant, University of North Bengal, Darjeeling, India
May 21, 2002 – Dec. 31, 2002	Junior Research Fellow , Birbal Sahni Institute of Palaeobotany, Lucknow, India
Jan. 1, 2003 – June 30, 2003	Junior Research Fellow , Birbal Sahni Institute of Palaeobotany, Lucknow, India
Aug. 22, 2003 – Mar. 28, 2007	Senior Research Fellow , Birbal Sahni Institute of Palaeobotany, Lucknow, India

Research Experience:

My research contributes to the understanding of past climate variability from seasonal to centennial time scales, spatial and temporal dynamics of climate variability, past glacier retreat and advance, stream-flow reconstruction, drought reconstruction, signature of past seismic events and fire history and tree-line shift using **tree-ring** data. I am also analyzing long-term relationships between tree-ring data with other global climate data and climate indices.

In addition to tree-ring analysis, I am also engaged in Palaeovegetation and Quantitative past climate reconstruction based on **Pollen analysis** of sub-surface sediments and surface sediments from Himalayan region.

HONOURS AND AWARDS:

- 2019 **INSA Bilateral Exchange Fellowship**: To visit Tree-ring and Environmental Change Group, Xishuangbanna Tropical Botanical Garden (XTBG), CAS, P.R. China; For the duration of 1 month.
- 2018 **Visiting Scientist**: Tree-ring and Environmental Change Group, Xishuangbanna Tropical Botanical Garden (XTBG), CAS, P.R. China; Jan.-Feb. 2018 (15 days)
- 2016 **Diamond Jubilee Medal**: for publishing papers of high quality in refereed journals during the two years preceding the year of the award.
- 2014 **Sharda Chandra Memorial Gold Medal:** jointly with co-authors of paper entitled *"Analysis of vegetation and climate change during Late Pleistocene from Ziro Valley, Arunachal Pradesh, Eastern Himalaya Region"* published in Quaternary Science Review 101, 111-123, 2014
- 2014 Fellow, East Himalayan Society for Spermatophyte Taxonomy
- 2014 **Paper of the Month Award:** for August-September, 2014 at BSIP, Lucknow: For paper entitled "Analysis of vegetation and climate change during Late Pleistocene from Ziro Valley, Arunachal Pradesh, Eastern Himalaya Region" published in Quaternary Science Review 101, 111-123, 2014 **(co-author)**
- 2014 **Paper of the Month Award:** for December, 2014 at BSIP, Lucknow: For paper entitled "Spring temperatures in the far-western Nepal Himalaya since A.D. 1640 reconstructed from *Picea smithiana* tree-ring widths" published in *Climate Dynamics* 45, 2069-2081, 2015 (correspondence author)

- 2008 **B.S.Venkatachala Memorial Gold Medal:** for the best research work done among the Young Scientists of the Birbal Sahni Institute of Palaeobotany, Lucknow, India.
- 2006 **Young Scientist Award** and **Second Best Presentation:** by Department of Science and Technology for the research contribution on Palaeoclimate studies (16th December, 2006). Department of Geology, University of Jammu, Jammu, India

IN-HOUSE (BSIP) PROJECTS:

April, 2019– March, 2021	Project: Tree-ring based climate reconstruction of the Eastern Himalaya: A spatio- temporal perspective ofmulti-decadal variability Status: Ongoing
April, 2017– March, 2019	Project: Spatio-temporal reconstruction of temperature and hydroclimatic variability in eastern and western Himalaya based on tree-rings Status: Completed
April, 2012– March, 2017	Project: <i>Tree-ring analysis from high altitude areas of Himalayan region: A comparative approach with emphasis on the eastern sector</i> (Project number: 10.2) Details: Project under XII Five Year Plan (2012-2017); Completed
April, 2007– March, 2012	Project: Analysis of climatic changes based on multi proxy data during Holocene from peninsular and Himalayan region (Project number: 10.2) Details: Project under XI Five Year Plan (2007-2012); Completed

Research Grants:

Principal Investigator	Project: <i>Past climate change and tree line dynamics based on tree-ring data from the</i> <i>Himalayan region</i> Sponsor: SERB Division, DST, New Delhi Status of the project: Completed
Member	Project: <i>Tree line shift in central Nepal Himalaya and climate reconstruction of past millennia</i> Sponsor: Nepal Academy of Science and Technology, Nepal. Principal Investigator: Tree-ring society of Nepal Status of the project: Completed
Co-Principal Investigator	Project: Analysis of Climatic changes since LGM from South-West continental margin India using Multi-Proxy data: Pollen, Diatom and Tree-ring data Sponsor: ISRO-GBP, India. Principal Investigator: Dr. Amalava Bhattacharyya, BSIP, Lucknow, India Status of the project: Completed

PARTICIPATION IN OTHER PROJECTS:

Aug. 22, 2003 –Worked as: Senior Research Fellow (SRF)Mar. 28, 2007Project/ Principal Investigator: Analysis of climatic changes in North-east India
during last several thousand years using pollen and tree-ring data / A. Bhattacharyya,
BSIP, Lucknow
Sponsor: Department of Science and Technology, New Delhi

Jan. 1, 2003 –	Worked as: Junior Research Fellow (JRF)
June 30, 2003	Project/ Principal Investigator: Analysis of climatic changes vis-à-vis glacial
	fluctuations using pollen and tree-ring data in Gangotri glacier area, Garhwal
	<i>Himalaya</i> / A. Bhattacharyya, BSIP, Lucknow
	Sponsor: Department of Science and Technology, New Delhi
May 21, 2002 –	Worked as: Junior Research Fellow (JRF)
Dec. 31, 2002	Project/ Principal Investigator: Analysis of climatic changes in eastern Himalayan
	region using tree-ring data / A. Bhattacharyya, BSIP, Lucknow
	Sponsor: Department of Science and Technology, New Delhi

PUBLICATIONS:

Summary of the publications:

Total numbers **50** [Original research paper **39**; Review paper **5**; Chapter contributed in edited book / Proceedings **4**; and Scientific report **2**]

Original Research Papers

- [37] Thomte, L, **Shah SK**, Mehrotra N, Bhagabati AK, Saikia A. 2019. Response between treerings of *Pinus kesiya* and daily climate data – A study from Manipur, Northeast India. *Himalayan Research Journal* (Accpeted)
- [38] Speer JH, Shah SK, Truettner C, Pacheco A, Bekker MF, Dukpa D, Cook ER, Tenzin K. 2019. Past Flood and River Flow Variability from Extreme Events Recorded in Trees Rings on the Dhur River, Bhutan. *Dendrochronologia* (In press)
- [37] Shah SK, Pandey U, Mehrotra N, Wiles GC, Chandra R. 2019. A winter temperature reconstruction for the Lidder Valley, Kashmir, Northwest Himalaya based on tree–rings of Pinus wallichian. *Climate Dynamics*. https://doi.org/10.1007/s00382-019-04773-6.
- [36] Bhandaria S, Gairec NP, Shah SK, Speerb JH, Bhuju DR, Thapa UK. 2019. A 307-year treering SPEI reconstruction indicates modern drought in western Nepal Himalayas. *Tree-ring Research* (In Press)
- [35] Shah SK, Singh R, Mehrotra N, Thomte L. 2019. River flow reconstruction of the Lohit River Basin, North-east India based on tree–rings of *Pinus merkusi* (Merkus pine). *The Palaeobotanist* (In press)
- [34] Gaire NP, Dhakal YR, Shah SK, Fan ZX, Bräuning A, Thapa UK, Bhandari S, Aryal S, Bhuju DR. 2019. Drought (scPDSI) reconstruction of trans-Himalayan region in western Nepal using *Pinus wallichiana* tree-rings. *Palaeogeography, Palaeoclimatology, Palaeoecology* 514: 251-264.
- [33] Mehrotra N, Shah SK. 2019, Basavaiah N, Laskar AH, Yadava MG. Resonance of the '4.2ka event' and terminations of global civilizations during the Holocene, in the palaeoclimate records around PT Tso Lake, Eastern Himalaya. *Quaternary International* 507: 206-216.
- [32] Shah SK, Pandey U, Mehrotra N. 2018. Precipitation reconstruction for the Lidder Valley, Kashmir Himalaya using tree-rings of *Cedrus deodara*. *International Journal of Climatology* 38: 758-773.

- [31] Babushkina EA, Belokopytova LV, Zhirnova DF, Shah SK, Kostyakova TV. 2018. Climatically driven yield variability of major crops in Khakassia (South Siberia). *International Journal of Biometeorology* 62: 939-948.
- [30] Babushkina EA, Belokopytova LV, Shah SK, Zhirnova DF. 2018. Past crops yield dynamics reconstruction from tree-ring chronologies in the forest-steppe zone based on low-and highfrequency components. *International Journal of Biometeorology* 62: 861-871.
- [29] Mehrotra N, Shah SK. 2018. A preliminary study of the modern pollen of Tripura, Northeast India. *The Palaeobotanist* 67: 21-31.
- [28] Shah SK, Pandey U, Mehrotra N, Chandra R. 2017. Tree-ring analysis of *Cedrus deodara* in Pahalgam, Kashmir valley, India: influence of climate and regional linkages. *Himalayan Research Journal* II(III): 1-8.
- [27] Mehrotra N, **Shah SK**, 2017. The Late Quaternary sediments from Tripura, North-east India: perspective on the constraints of their radiocarbon dating. *Geophytology* 47(2): 221-227.
- [26] Shah SK, Mehrotra N. 2017. Tree–ring studies of *Toona ciliata* from subtropical wet hill forests of Kalimpong, eastern Himalaya. *Dendrochronologia* 46: 46-55.
- [25] Mehrotra RC, Mehrotra N, Srivastava G, Shah SK. 2017. Occurrence of fossil woods in the Unakoti district, Tripura and their palaeoclimatic significance. *Journal of the Palaeontological Society of India* 62(1): 17-30.
- [24] Gaire NP, Bhuju DR, Koirala M, Shah SK, Carrer M, Timilsena R. 2017. Tree-ring based spring precipitation reconstruction in western Nepal Himalaya since AD 1840. *Dendrochronologia* 42: 21-30.
- [23] Shah SK, Touchan R, Babushkina E, Shishov VV, Meko DM, Abramenko OV, Belokopytova LV, Hordo M, Jevšenak J, Kędziora W, Kostyakova TV, Moskwa A, Oleksiak Z, Omurova G, Ovchinnikov S, Sadeghpour M, Saikia A, Sidenko T, Strantsov A, Tamkevičiūtė M, Tomusiak R, Tychkov I, Sewastynowicz Ł. 2015. August-July precipitation from tree rings in forest-steppe zone of central Siberia (Russia). *Tree-ring research* 71(1): 37-44.
- [22] Thapa UK, Shah SK, Gaire NP, Bhuju DR. 2015. Spring temperatures in the far-western Nepal Himalaya since A.D. 1640 reconstructed from *Picea smithiana* tree-ring widths. *Climate Dynamics* 45: 2069-2081.
- [21] Bhattacharyya A, Mehrotra N, Shah SK, Basavaiah N, Chaudhary V, Singh IB. 2014. Analysis of vegetation and climate change during Late Pleistocene from Ziro Valley, Arunachal Pradesh, Eastern Himalaya Region. *Quaternary Science Review* 101: 111-123.
- [20] Shah SK, Bhattacharyya A, Chaudhary V. 2014. Streamflow reconstruction of Eastern Himalaya River, Lachen 'Chhu', North Sikkim, based on tree-ring data of Larix griffithiana from Zemu Glacier basin. Dendrochronologia 32: 97-106.
- [19] Shah SK, Shekhar M, Bhattacharyya A. 2014. Anomalous distribution of *Cedrus deodara* and *Pinus roxburghii* in Parbati valley, Kullu, Western Himalaya: An assessment in Dendrochronological perspective. *Quaternary International* 325: 205-212.
- [18] Thapa U, **Shah SK**, Gaire NP, Bhuju DR, Bhattacharyya A, Thaguna GS. 2013. Influence of climate on radial growth of *Abies pindrow* in Western Nepal Himalaya. *Banko Janakari A*

Journal of Forestry Information for Nepal 23(2): 14-19.

- [17] Shah SK, Bhattacharyya A, Shekhar M. 2013. Reconstructing discharge of Beas river basin, Kullu valley, western Himalaya based on tree-ring data. *Quaternary International* 286: 138-147.
- [16] **Shah SK**, Bhattacharyya A. 2012. Spatio-temporal growth variability three *Pinus* species of Northeast Himalaya with relation to climate. *Dendrochronologia* 30: 266-278.
- [15] Gaire NP, Dhakal YR, Lekhak HC, Bhuju DR, Shah SK. 2011. Dynamics of *Abies spectabilis* in relation to climate change at the tree line ecotone in Langtang National Park, Nepal Himalaya. *Nepal Journal of Science and Technology* 12: 220-229.
- [14] Bhattacharyya A, Mehrotra N, **Shah SK**. 2011. Holocene vegetation and climate of South Tripura based on Palynological analysis. *Journal Geological Society of India* 77: 521-526.
- [13] Managave SR, Sheshshayee MS, Ramesh R, Borgaonkar HP, Shah SK, Bhattacharyya A.
 2011. Response of cellulose δ18O of teak trees in differing monsoon environments to monsoon rainfall. *Dendrochronologia* 29: 89-79.
- [12] Brown PM, Bhattacharyya A, Shah SK. 2011. Potential for developing fire histories in chir pine (*Pinus roxburghii*) forests in the Himalayan foothills, India. *Tree-ring Research* 67(1): 57-62.
- [11] Gaire NP, Dhakal YR, Lekhak HC, Bhuju DR, Shah SK. 2010. Vegetation Dynamics I n Treeline Ecotone of Langtang National Park, Central Nepal. Nepal Journal of Science and Technology 11: 107-114.
- [10] Shah SK, Bhattacharyya A. 2009. Tree-ring analysis of sub-fossil woods of *Pinus wallichiana* from Ziro valley, Arunachal Pradesh, North-East Himalaya. *Journal of Geological Society of India* 74: 503-508.
- [09] **Shah SK**, Bhattacharyya A, Chaudhary V. 2009. Climatic influence on radial growth of *Pinus wallichiana* in Ziro valley, North-east Himalaya. *Current Science* 96(5): 697-702.
- [08] Chakraborty S, Dutta K, Bhattacharyya A, Nigam M, Schuur EAG, Shah SK. 2008. Atmospheric ¹⁴C variability recorded in tree-rings from Peninsular India: implications for fossil fuel CO₂ emission and Atmospheric transport. *Radiocarbon* 50(3): 321-330.
- [07] Bhattacharyya A, Shah SK, Chaudhary V. 2008. Feasibility of tree ring data in Palaeoseismic dating in northeast Himalaya. *Journal of Geological Society of India* 71: 419-423
- [06] Bhattacharyya A, Eckstein D, Shah SK, Chaudhury V. 2007. Analyses of climatic changes around Perambiculum, south India based on early wood mean vessel area of teak. *Current Science* 93(8): 1159-1164.
- [05] Bhattacharyya A, Sharma J, Shah SK, Chaudhury V. 2007. Climatic changes last 1800 years BP from Paradise lake, Sela pass, Arunachal Pradesh, Northeast Himalaya. *Current Science* 93(7): 983-987.
- [04] Shah SK, Bhattacharyya A, Chaudhary V. 2007. Reconstruction of June-September Precipitation based on tree-ring data of Teak (*Tectona grandis* L.) from Hoshangabad, Madhya Pradesh, India. *Dendrochronologia* 25: 57-64.

- [03] Mehrotra RC, Bhattacharyya A, **Shah SK**. 2006. Petrified neogene woods of Tripura. *The Palaeobotanist* 55: 67-76.
- [02] Bhattacharyya A, **Shah SK**, Chaudhary V. 2006. Would tree-ring data of *Betula utilis* be potential for the analysis of Himalayan Glacial fluctuations? *Current Science* 91(6): 754-761.
- [01] Bhattacharyya A, Ranhotra PS, **Shah SK**. 2006. Temporal and spatial variations of late Pleistocene-Holocene climate of the western Himalaya based on pollen records and their implications to Monsoon dynamics. *Journal Geological Society of India* 68: 507-515.

Review Papers

- [05] Pandey U, Shah SK, Mehrotra N. 2016. Tree-ring studies from Kashmir valley: Present status and future perspectives. *Geophytology* 46(2): 207-220.
- [04] **Shah SK,** Bhattacharyya A, Mehrotra N. 2014. Tree-ring studies from eastern Himalaya: Prospects and challenges. *Himalayan Research Journal* 2(1): 76-87.
- [03] Mehrotra N, **Shah SK**, Bhattacharyya A. 2014. Review of Palaeoclimate records from Northeast India based on Pollen proxy data of Late Pleistocene-Holocene. *Quaternary International* 325: 41-54.
- [02] Bhattacharyya A, Ranhotra PS, Shah SK. 2011. Spatio-Temporal Variation of Alpine Vegetation vis-à-vis Climate during Holocene in the Himalaya. *Memoir of the Geological Society of India* 77: 309-319.
- [01] Bhattacharyya A, **Shah SK**. 2009. Tree-ring study in India Past appraisal, present status and future prospects. *IAWA* 30(4): 361-370.

Chapter contributed in edited book / Proceedings

- [04] Dhakal YR, Gaire NP, Aryal S, Shah SK, Bhandari S, Kunwar U, Rayamajhi S. Treeline shift in central Nepal Himalaya and climate reconstruction of past millennia. 2016 In: Bhuju DR, McLaughlin K, Sijapati J, Devkota BD, Shrestha N, Ghimire GP, Neupane PK. (eds.), Building Knowledge for Climate Resilience in Nepal. Nepal Academy of Science and Technology, Lalitpur. Pp 41-44.
- [03] Chaudhary V, Bhattacharyya A, Guiot J, Shah SK, Srivastava SK, Edouard J-L, Thomas A. 2013. Reconstruction of August-September temperature, in North-Western Himalaya since AD 1773, based on tree-ring data of *Pinus wallichiana* and *Abies pindrow*. In: Kotlia BS. (ed.), Holocene: Perspectives, Environmental Dynamics and Impact Events, Nova Science Publishers Inc., pp 145-156.
- [02] Bhattacharyya A, Shekhar M, Shah SK. 2012. Role of tree-ring study in forest management: Prospects in Indian context. In: Panda S, Ghosh C, (eds.) Diversity and Conservation of Plants and Traditional Knowledge. Bishen Singh Mahendra pal Singh, Dehradun, pp 287-298.
- [01] Bhattacharyya A, Chaudhary V, **Shah SK.** 2003. Tree-Ring Analysis of Tropical Indian Trees. In *Proceedings of the International PAGES workshop and training program at the French Institute, Pondicherry,* pp 241-242.

Scientific reports

- [02] Bhuju DR, Shah SK, Gaire NP. 2016. Environmental reconstruction and impact of climate change on vegetation at tree-lines of Nepal Himalaya. Annual report of Pro Natura Foundation Japan vol 24, pp 24
- [01] Mehrotra N, **Shah SK.** 2014. Review of Holocene palaeoclimate of Northeast India based on Pollen records. Quaternary Geology and Climate Change Newsletter 1(1), pp 15-16.

Research Supervisions:

Ph.D Thesis

- [02] Tentative Title: Past climate reconstruction of the Eastern Himalaya region based on tree-rings Candidate/ Year of Award: Lamginsang Thomte/ Pursuing Affiliation: Department of Geography, Gauhati University, Guwahati Assam and Birbal Sahni Institute of Palaeosciences, Lucknow, India
- [01] Title: Dendroclimatology of Liddar valley and adjoining areas in Kashmir Himalaya Candidate/ Year of Award: Uttam Pandey/ Thesis submitted in Oct., 2018 Affiliation: Department of Geology, CAS, Lucknow University and Birbal Sahni Institute of Palaeosciences, Lucknow, India

M.Sc Dissertations

- [06] Title: *Tree-rings study of Pinus wallichiana from Chumey valley, Bumthang, Bhutan* Candidate/ Year of Award: Jambay Dema/ 2019
 Affiliation: College of Natural Resources, Royal University of Bhutan, Lobesa, Bhutan.
- [05] Title: Response of climate on radial growth of Pinus kesiya in East Khasi Hills of Meghalaya, India Candidate/ Year of Award: Laikitkupar Lyngdoh/ 2019 Affiliation: College of Natural Resources, Royal University of Bhutan, Lobesa, Bhutan.
- [04] Title: Tree-ring based streamflow reconstruction for the Lohit basin, Arunachal Pradesh, North-east India
 Candidate/ Year of Award: Rohini Singh/ 2017
 Affiliation: School of Earth Sciences, Department of Geology, Banasthali University, Rajasthan, India.
- [03] Title: Climatic reconstruction of western Nepal Himalaya spanning over three centuries as inferred from ring-widths of Picea smithiana (Wall.) Boiss Candidate/ Year of Award: Udya K.Thapa/ 2013 Affiliation: Golden Gate Int'l College (affiliated to Tribhuvan University, Kathmandu, Nepal), Nepal.
- [02] Title: Forest ecology and tree-ring pattern at the treeline of Langtang National Park, Rasuwa, Nepal Himalaya
 Candidate/ Year of Award: Yub Raj Dhakal/ 2009
 Affiliation: Central Department of Environmental Science, Tribhuvan University, Nepal.

 [01] Title: Ecology and Dendroclimatology of Treeline Forest in Langtang National Park, Nepal Himalaya
 Candidate/ Year of Award: Narayan Prasad Gaire/ 2009
 Affiliation: Central Department of Environmental Science, Tribhuvan University, Nepal.

Synergistic Activities:

Resource Person

- [05] Instructor for "Training on Dendrochronology and its application" held at Resources Himalaya Foundation, Kathmandu, Nepal; organized by Tree-ring Society of Nepal; August 24-25, 2018
- [04] Group Leader/ Instructor for field week of project *Dendroclimatology and Dendrohydrology* during 10th World Dendro Conference; June 2-22, 2018
- [03] Training Workshop on "Tree ring analysis using Matlab and R" Tree-ring and Environmental Change Group, Xishuangbanna Tropical Botanical Garden (XTBG), Chinese Academy of Sciences, P.R. China; January 31, 2017
- [02] Training Workshop on "Reconstructing Climate Using Dendrochronological Tools" held at Resources Himalaya Foundation, Kathmandu, Nepal; organized by Tree-ring Society of Nepal; February 3-7, 2014
- [01] Training Workshop on "Concepts in Quaternary climate studies with emphasis on Dendrochronology and Palynology" held at Srinagar, Garhwal Himalaya, Uttaranchal; organized by BSIP, Lucknow, India; 2009

Scientific Committee Member

- [02] 10th World Dendro Conference; June 2-22, 2018
- [01] The fourth *International Asian Dendrochronological Conference on climate change and tree rings*, Kathmandu, Nepal; March 9-12, 2015

Organizer

[01] Organizing Secretary of "AsianDendro 2019 - The 6th Asian Dendrochronology Conference" scheduled to be held at BSIP, Lucknow during November 24–30, 2019

Organizing Committee Member

- [02] Brainstorming workshop on "Quaternary Environments and Climates: Focus on Holocene and Anthropocene" BSIP Lucknow, February 21–23, 2017
- [01] National conference on "Quaternary Climate Change: New approaches and emerging challenges" BSIP Lucknow, December 15–16, 2014

Session Chair

- [03] For session Dendrohydrology during 10th World Dendro Conference; June 2–22, 2018
- [02] For session "High resolution Palaeoclimatic Change" National Conference on Quaternary Climate Change: New Approaches and Emerging Challenges" held at BSIP, Lucknow; December 15–16, 2014

[01] For session "Vegetation and land-cover calibration: Models & Methods" IGBP PAGES PHAROS Workshop: Land-cover reconstructions in the monsoon affected tropical world-pollen modelling approach and data synthesis held at French Institute of Pondichrerry, Puducherry; January 27–29, 2011

External Examiner for PhD viva-voce

- [03] Department of Env. Science, Tribhuvan University, Kathmandu, Nepal; August, 2018
- [02] Institute of Forestry, Pokhara, Tribhuvan University, Nepal; November, 2016
- [01] Department of Env. Science, Tribhuvan University, Kathmandu, Nepal; September, 2016

PROFESSIONAL MEMBERSHIPS:

- The Indian Science Congress Association
- Asian Dendrochronology Association (ADA)
- Indian Society of Glaciological Sciences
- East Himalayan Society of Spermatophyte Taxonomy
- The Palaeobotanical Society
- Palaeontological Society of India
- Tree-ring society of Nepal

Updated | June, 2019