

Birbal Sahni Institute of Palaeosciences
Monthly summary on Research Activities
(November, 2021)

1. Areas of Focus:

The institute carries out research on fundamental as well as applied aspects of Palaeosciences that includes Evolutionary history of biota, Paleoclimate, studies of past civilization, Human history and contemporary Climate Change issues, following an integrated and multi-disciplinary approach.

Key research activities under following objectives:

- Understanding origin and evolution of life through time and space.
- Understanding climate change in recent and deep geological times.
- Understanding past civilization and human history.
- Application of Palaeosciences in exploration of fossil fuel and coal industry.

2. Important Highlights of Major Research Programmes

a. Observance of Vigilance Awareness Week 2021

Vigilance Awareness Week-2021 was observed during October 26–November 1, 2021. About 175 staff members including Director, scientists, students, technical and administrative staff members took the integrity pledge in English and Hindi both on October 26, 2021. A poster competition on the topic “Prevention of corruption” and an Essay writing competition on the topic “*Promotion of vigilance and consciousness*” were organized within the Institute during the week. Winner of both the competitions received the prizes and certificates from Prof. Sandeep Verma, Secretary SERB, New Delhi on the occasion of Founder’s Day of the Institute.

b. Founder’s Day celebration (November 14, 2021)

BSIP celebrated Founder’s Day on November 14, 2021. The chief guest of the function was Dr. M. Ravichandran Secretary, Ministry of Earth Science and Department of Science and Technology (DST). Dr. Vandana Prasad (Director BSIP) walked the audience through memory lane of legacy and contributions of Late Prof. Birbal Sahni and also highlighted the achievements and research themes on which BSIP scientific staff is working. Prof. Sandeep Verma, Secretary SERB-DST delivered 51th Prof. Birbal Sahni Lecture on Science Technology Innovation policy (STIP)-2020: Policy and Process. The institute’s annual report (2021-2022) and a documentary film showcasing seventy-five years of institute’s achievements was also released on the occasion of institutes Founders’ Day as well as platinum jubilee celebrations. The event was attended by all the scientists, technical staff and research scholars of the institute by their physical presence as well as through online platform.

c. National Constitution Day (November 26, 2021)

BSIP celebrated the National Constitution day on 26th November, 2021 at its Campus by reading the Preamble of the Constitution of India in an online mode. BSIP staff including

scientists, research scholars and admin staff participated in an online quiz event related to constitution of India.

List of research publications (November 2021)

1. **Khan, S., Farooqui, A., Shukla, U.K., Grøsfjeld, K., Knies, J., Prasad, V.** (2021). Late Pliocene continental climate and vegetation variability in the Arctic-Atlantic gateway region prior to the intensification of Northern Hemisphere glaciations. *Palaeogeography Palaeoclimatology Palaeoecology*. DOI: 10.1016/j.palaeo.2021.110746. (**Impact factor:3.31**).
2. **Prasanna, K., Ghosh, P., Eagle, R.A., Tripathi, A., Kapur, V.V., Feeney, R.F., Fosu, B.R., Mishra, D.,** (2021). Temperature estimates of lower Miocene (Burdigalian) coastal water of Southern India using a revised otolith ‘clumped’ isotope palaeothermometer. *Geochemistry, Geophysics, Geosystems*. DOI: 10.1029/2020GC009601. (**Impact factor: 3.624**).
3. **Thomte, L., Shah, S.K., Mehrotra, N., Bhagabati, A.K., Saikia, A.** (2021). Influence of climate on multiple tree-ring parameters of *Pinus kesiyana* from Manipur, Northeast India. *Dendrochronologia* 71. DOI:10.1016/j.dendro.2021.125906 (**Impact factor:2.69**).
4. **Aggarwal, N.** (2021). Sedimentary organic matter as a proficient tool for the palaeoenvironmental and palaeodepositional settings on Gondwana coal deposits. *Journal of Petroleum Exploration and Production Technology*. DOI: 10.1007/s13202-021-01331-x (**Impact factor:2.07**).
5. **Patel, R., Goswami, S., Aggarwal, N., Mathews, R.P.** (2021). Palaeofloristics of Lower Gondwana exposure in Hingula area, Talcher Basin, Odisha, India: an inclusive study on biomarkers, megafloreal and palynofloreal assemblages. *Historical Biology*. DOI: 10.1080/08912963.2021.1986039 (**Impact factor:2.25**).
6. **Khan, M.A.R., Singh, S., Pandey, P., Bhardwaj A., Ali., S.N., Chaturvedi, V., Ray, P.K.C.** (2021). Modelling Permafrost Distribution in Western Himalaya Using Remote Sensing and Field Observations. *Remote Sensing* 13(21):4403. DOI: 10.3390/rs13214403. (**Impact factor:4.84**).
7. **Bhatia, H., Srivastava, G., Mishra, S.R., Prasenjit, B., Su, T., Mehrotra, R.C., Tripathi, S.C.** (2021). Warm and humid Trans-Himalaya during the late Miocene: plant fossil evidence. *Palaeoworld*. DOI: 10.1016/j.palwor.2021.10.003. (**Impact factor:1.84**).
8. **Demina, A.V., Belokopytova, L.V., Zhirnova, D.F., Mehrotra, N., Shah, S.K., Babushkina, E.A., Vaganov, E.A.** (2021). Degree of connectivity in reconstructed precipitation dynamics and extremes for semiarid regions across South Siberia. *Dendrochronologia* 71. DOI: 10.1016/j.dendro.2021.125903. (**Impact factor: 2.69**).
9. **Tiwari, A.K., Singh, A.K., Phartiyal, B., Sharma, A.** (2021). Hydrogeochemical characteristics of the Indus River water system. *Chemistry and Ecology* 37 (9–10), 780–808 DOI: 10.1080/02757540.2021.1999425 (**Impact factor: 2.24**).

10. Mishra, S., Dixit, A., Mishra, V.K., **Singh, V.P.**, Mendhe, V.A. (2021). Pore structures and fractal dimensions in Early Permian Barakar shales of Rajmahal Basin, Jharkhand, India. *Arabian Journal of Geosciences* 14. DOI.: Arabian Journal of Geosciences 14, 2340. DOI.: 10.1007/s12517-021-08373-9. (**Impact factor: 1.82**).
11. Umamaheswaran, R., Dutta, S., **Singh, H.**, Kumar, S. (2021). Pyrolysis-GC×GC-TOFMS as a tool for distinguishing the macromolecular structure of nitrogen-bearing animal biopolymers in fossil tissues. *Journal of Analytical and Applied Pyrolysis*. DOI.: 10.1016/j.jaap.2021.105362. (**Impact factor: 5.54**).
12. Wood, H.M., **Singh, H.**, Grimaldi, D.A. (2021). Another Laurasian connection in the Early Eocene of India: *Myrmecarchaea* spiders (Araneae, Archaeidae). *ZooKeys* 1071: 49–61. DOI.: 10.3897/zookeys.1071.72515 (**Impact factor: 1.54**).
13. Patel, R., Goswami, S., **Aggarwal, N.**, **Mathews, R.P.**(2021). Lower Gondwana megafloora, palynoflora, and biomarkers from Jagannath Colliery, Talcher Basin, Odisha, India, and its biostratigraphic significance. *Geological Journal*. DOI.: 10.1002/gj.4318. (**Impact factor: 2.468**).

Photographs showing important highlights of major programs/research activities organized during November, 2021:

