

Dr. Niteshkumar N. Khonde

Scientist 'C'

Birbal Sahni Institute of Palaeosciences (BSIP)

An autonomous institute under the

Department of Science and Technology (DST)

Government of India



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RESEARCH INTERESTS: Marginal marine environments, Land-sea interactions, Active tectonics and landscape development, Palaeoclimate/palaeoenvironments, Provenance.

EDUCATION

2009-2014	Ph.D. in Geology, The Maharaja Sayajirao University of Baroda, Vadodara, India (Mentor: Prof. D. M. Maurya)
2006-2008	M.Sc. in Geology, The Maharaja Sayajirao University of Baroda, Vadodara, India
2003-2006	B.Sc. (Geology), North Maharashtra University Jalgaon, Jalgaon, India

PROFESSIONAL APPOINTMENTS

July 2021-	Assistant Professor (Honorary) - Faculty of Physical Sciences in Academy of Scientific and Innovative Research (AcSIR), Gaziabad, UP, INDIA
July 2020-present	Scientist C (regular) – Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow, UP, INDIA
April 2017-June 2020	Scientist B (regular) – Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow, UP, INDIA
2018-2019	Visiting Scientist at State Key Laboratory of Marine Geology, Tongji University, Shanghai, CHINA under the “Open Fund” project.
2017- 2018	SERB Indo-US Postdoctoral Research Fellow, Department of Geology & Geophysics, Woods Hole Oceanographic Institution (Woods Hole, Massachusetts), USA. Sponsor: Liviu Giosan
2016-2019	Principal Investigator, Science and Engineering Research Board (SERB) - Research Project, Department of Science and Technology, New Delhi, INDIA
2014-2016	Post-Doctoral Fellow, Physical Research Laboratory, Ahmedabad, INDIA

2014-2012	Council for Scientific and Industrial Research (CSIR)-Senior research Fellow (SRF) at Department of Geology, Faculty of Science, The M S University of Baroda, Vadodara-390002
2009-2012	Junior Research Fellow (JRF) in Department of Science and Technology sponsored research project titled, “Subsurface Quaternary Stratigraphy and tectonogeomorphic evolution of Great Rann of Kachchh, Western India”.
2008-2009	Project Fellow (PF) in Department of Science and Technology sponsored research project titled, “Subsurface Quaternary Stratigraphy and tectonogeomorphic evolution of Great Rann of Kachchh, Western India”.

SPONSORED/POST-DOCTORAL RESEARCH PROJECTS*

Sr. No.	Investigators	Title of the Project	Funding Agency	Total Grant	Duration
01	Nitesh Khonde (Core member)	Biological and biogeochemical changes during Quaternary period from coastal regions of India: Insights into coastal dynamics and monsoonal variability	Birbal Sahni Institute of Palaeosciences (BSIP), In-house Project	BSIP In-house project	2021-2024 (ongoing)
02	Associate Member	Quaternary Monsoon/Climate reconstruction through high resolution multi-proxy studies of lacustrine archives from Central India (Core Monsoon Zone and Indo-Gangetic Plain)	Birbal Sahni Institute of Palaeosciences (BSIP), In-house Project	BSIP In-house project	2021-2024 (ongoing)
03	Nitesh Khonde (P.I.)	Holocene sedimentation and associated palaeoenvironmental changes in western Great Rann of Kachchh (GRK) Basin, western India	Birbal Sahni Institute of Palaeosciences (BSIP), In-house Project	BSIP In-house project	2019-2021
04	Nitesh Khonde	Holocene monsoon	Open Fund	80000	2018-2020

	(PI), Liviu Giosan (Co-PI), Shouye Yang (Co-PI)	evolution in SE Asia (Myanmar) as reflected by the provenance and weathering of Ayeyawady River sediments	Project, Tongji University, China	RMB Or \$ 12000	
05	Nitesh Khonde (P.I.) D.M. Maurya (Mentor)	Post LGM sedimentation pattern and environmental changes in the great Rann of Kachchh basin, Western India”	Science and Engineering Research Board (SERB)- Department of Science and Technology (DST), New Delhi	INR 29,92,000 Or \$ 46,000	2016-2019
06	Nitesh Khonde (P.I.)	Late Holocene environments and provenance of the western Great Rann of Kachchh sediments, Western India	Birbal Sahni Institute of Palaeosciences (BSIP), Internal Project	BSIP In-house project	2017-2019
07	Nitesh Khonde; Liviu Giosan (Mentor)	*Evolution of the Indian monsoon rainfall over the past ~23 million years	Science and Engineering Research Board (SERB)- Indo-US Science and Technology Forum (IUSSTF) Sponsored Indo-US Post-doctoral Fellowship	Total grant: INR 27,52,000 or \$42,350	2017-2018

08	Nitesh Khonde; Ravi Bhushan (Mentor)	*Late Quaternary paleoclimatic and paleoproductivity changes and denitrification history of Oxygen Minimum Zone (OMZ) of Eastern Arabian Sea	Physical Research Laboratory (PRL) Institutional Post-Doctoral Fellowship	No dedicated research grant other than salary.	2014-2016
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PUBLICATIONS

Full length Publications

- [17] Nikhil Patel, Preeti Trivedi, Rajesh Agnihotri, Niraj Rai, Vijay Sathe, Ravi Bhushan, **Niteshkumar Khonde** and Alok Kumar; New Chronology for Megalithic burials in Vidarbha (Central India): Insights into contemporary hydro-climate and food habits (*Accepted In Radiocarbon*)
- [16] Abhishek Kumar, D. M. Maurya, **Niteshkumar Khonde**, Binita Phartiyal, Md. Arif, Liviu Giosan and L. S. Holocene palaeoenvironmental changes in the marginal marine basin of Great Rann of Kachchh, western India: Insights from sedimentological and mineral magnetic studies on a ~60 m long core. *Quaternary International*, V 599, pp. 138-147, 2021. <https://doi.org/10.1016/j.quaint.2021.02.039>
- [15] Rajesh Agnihorti, Anjum Farooqui, **Niteshkumar Khonde**, Runcie P. Mathews, S. Sharma, S.K.S Gahlaud, S.K. Manjul, Arvin Manjul and R. Sawlani. Microscopic, biochemical and stable isotopic investigation of seven multi-nutritional food-balls from Indus archaeological site, Rajasthan (India). *Journal of Archaeological Science: Reports* 37:102917 2021. <https://doi.org/10.1016/j.jasrep.2021.102917>
- [14] Akash Padmalal, **Nitesh Khonde**, D. M. Maurya, Mohammedharoon Shaikh, Abhishek Kumar, Naimisha Vanik and L. S. Chamyal. Geomorphic characteristics and morphologic dating of the Allah Bund Fault scarp, Great Rann of Kachchh, Western India. Book Chapter, Springer. *Invited book chapter In, Tectonics and Structural Geology: Indian Context; S. Mukherjee (ed.), Tectonics and structural Geology: Indian Context, Springer Geology*, pg. https://doi.org/10.1007/978-3-319-99341-6_3.
- [13] Liviu Giosan, Thet Naing, Myo Min Tun, Peter D. Clift, Florin Filip, Stefan Constantinescu, **Nitesh Khonde**, Jerzy Blusztajn, Jan-Pieter Buylaert, Thomas Stevens and Swe Thwin. On the Holocene Evolution of the Ayeyawady Megadelta. *Earth Surface Dynamics (ESurf)* 6, 451-466, <https://doi.org/10.5194/esurf-6-451-2018>, 2018.
- [12] **Khonde N**, Singh SK, Maurya DM, Rai VK, Chamyal LS and Giosan L (2017a) Tracing the Vedic Saraswati River in the Great Rann of Kachchh. *Scientific Reports*, 7 (5476) doi:10.1038/s41598-017-05745-8.
- [11] **Khonde N**, Maurya DM and Chamyal LS (2017b) Late Pleistocene–Holocene clay mineral record from the Great Rann of Kachchh basin, Western India: Implications for

palaeoenvironments and sediment sources. In Press. *Invited paper in special volume "Third Pole" in Quaternary International*, 443, pp 86-98.
<http://dx.doi.org/10.1016/j.quaint.2016.07.024>

- [10] Maurya DM, Tiwari Mamta, Rajawat AS, Kumar H, **Khonde N** and Chamyal LS (2016) Geomorphic characterization of the Banni Plain, Kachchh, using Orbital Imaging Radar (RISAT 1C) and optical remote sensing data. *Spec. Publ. Geol. Soc. Ind.*, No.6, pp.167-177.
- [9] Chowksey V, Maurya DM, **Khonde N** and Chamyal LS (2016) Morphotectonic control on Quaternary sedimentation and landscape evolution, Pachham Island, Kachchh, Western India. *Arabian Journal of Geosciences*, 9:594. doi:10.1007/s12517-016-2625-1
- [8] Subrahmanyam G, **Khonde N**, Maurya DM, Chamyal LS and Archana G (2014) Microbial activity and Culturable bacterial diversity in sediments of the Great Rann of Kachchh, Western India. *Pedosphere*, 24 (1), pp. 45-55. Doi: [http://dx.doi.org/10.1016/S1002-0160\(13\)60079-X](http://dx.doi.org/10.1016/S1002-0160(13)60079-X).
- [7] Maurya DM, **Khonde N**, Das Archana, Chowksey V and Chamyal LS (2013) Subsurface sediment characteristics of Great Rann of Kachchh, western India based on preliminary evaluation of textural analysis of two continuous sediment cores. *Current Science*, 104 (8), pp. 1071-77.
- [6] **Khonde N**, Maurya DM, Singh AD, Das Archana and Chamyal LS (2013) Sediment Characteristics and Foraminiferal Distribution in the Bet Zone of the Great Rann of Kachchh, Western India. *Spec. Pub. Geol. Soc. Ind.*, 1, pp. 146-56.
- [5] **Khonde N**, Maurya DM, Singh AD, Chowksey V and Chamyal LS (2011) Environmental significance of raised rann sediments along the margins of Khadir, Bhanjada and Kuar Bet islands in Great Rann of Kachchh, Western India. *Current Science*, 101 (11), 1429-34.
- [4] **Khonde N**, Maurya DM, Chowksey V, Thakkar MG and Chamyal LS (2011) Tectonic geomorphology of the Chang river basin in the SE Wagad, Kachchh, Western India: *In Geological Processes and Climate Change*, Edi. Singh DS and Chabra NL Chap.13. pp.151-162. ISBN: 10-0230/32192/5.
- [3] Chowksey V, Maurya DM, Joshi Parul, **Khonde N**, Das Archana and Chamyal LS (2011) Lithostratigraphic development and neotectonic significance of the Quaternary sediments along the Kachchh Mainland Fault (KMF) zone, western India. *Jour. Ear. Sys. Sci.*, 120 (6), pp 979-999.
- [2] Chowksey V, Maurya DM, **Khonde N** and Chamyal LS (2010) Tectonic geomorphology and evidence for active tilting of the Bela, Khadir and Bhanjada islands in the seismically active Kachchh palaeorift graben, Western India. *Z.F.Geomorph.*, 54 (4), 467-490.
- [1] Maurya DM, Thakkar MG, **Khonde N** and Chamyal LS (2009) Geomorphology of the Little Rann of Kachchh, W. India: Implication for basin architecture and Holocene palaeo-oceanographic conditions. *Z. F. Geomorph.*, 53 (1), pp. 69-80.

SELECTED CONFERENCE ABSTRACTS (International)

- [12] **N. Khonde**, AD Singh, DM Maurya and LS Chamyal., Holocene foraminiferal assemblage and its environmental significance in the Great Rann of Kachchh (GRK) basin, Western

India. 27th ICMS-2019 organised at Banaras Hindu University, Varanasi during 4-6 November 2019.

- [11] **N. Khonde**, DM Maurya, Ravi Bhushan, Liviu Giosan and LS Chamyal, Geochemical studies on late Quaternary sediments from Great Rann of Kachchh (GRK) basin, Western India. 9th International Conference on Asian Marine Geology (9th ICAMG) held at Tongji University, Shanghai, China during 11-12 Oct 2018.
- [10] A. Kumar, DM Maurya, **N. Khonde** and LS Chamyal, Environmental Significance of Sediment Grain Size From the Holocene Great Rann Basin at the Western Continental Margin of India. 9th International conference on Geomorphology-2017, New Delhi.
- [9] A. Kumar, **N. Khonde**, DM Maurya and LS Chamyal, Magnetic Susceptibility and Grain Size Variability of the Subsurface Sediments of Great Rann of Kachchh Basin, Western India: Implications for Palaeoenvironments. AGU Fall Meeting, held during 11-15 Dec 2017, at New Orleans, USA.
- [8] **N. Khonde**, Ravi Bhushan, Rajesh Agnihotri, DM Maurya and LS Chamyal, Source of the Organic Matter and Land-Marine Interaction Phases in Great Rann of Kachch Basin, India. AGU Fall Meeting, held during 11-15 Dec 2017, at New Orleans, USA.
- [7] **N. Khonde**, SK Singh, DM Maurya, VK Rai, LS Chamyal and L Giosan, Provenance tracking for terrigenous sediment fluxes to the Northern Arabian Sea: The Great Rann of Kachchh. *In* IODP Workshop on, Land-Ocean Interactions Across the Indian Ocean: Toward Regional Integration of Recent Drilling Results, held during 10-12 July 2017 at Narragansett, Rhode Island, USA.
- [6] Banerji Upasana, Bhushan R, Agnihotri R, **Khonde N**, Sawlani R, Sharma C and Jull ATJ, Sedimentary Sulphur isotopes as tracers for sea level variability at southern Saurashtra coast Gujarat, Western India. Goldschmidt-2016, JAPAN
- [5] **Khonde N**, Maurya DM, Singh AD, Bhushan R and Chamyal LS (2015) Late Pleistocene-Holocene land-marine interaction records from the paleo-gulf environments of Great Rann of Kachchh, Western India. INQUA-2015, held at Nagoya, JAPAN
- [4] **Khonde N**, Maurya DM, Bhushan R and Chamyal LS (2013) Tracking sources of sediments in Great Rann of Kachchh, Western India during Last 17 Ka using Sr and Nd isotope composition. 125th GSA-2013 held at Denver, USA
- [3] **Khonde N**, Maurya DM, Bhushan R, Das Archana, Joshi Parul and Chamyal LS (2013) Late-Pleistocene-Holocene basin filling by Himalayan sediments in Great Rann of Kachchh: A palaeoclimatic perspective. PAGES-2013 held at Goa, INDIA.
- [2] Das Archana, Maurya DM, **Khonde N** and Chamyal LS (2011) Lithostratigraphy of a ~50 m deep core from the Banni plain in Kachchh, Western India: palaeoenvironmental implications. 7th ICAMG held at Goa, INDIA
- [1] **Khonde N**, Maurya DM, Das Archana and Chamyal LS (2011) Lithostratigraphy of a ~60 m deep core from the Great Rann of Kachchh, Western India: palaeoenvironmental implications. 7th ICAMG-2011 held at Goa, INDIA.

CONFERENCE ABSTRACTS (National)

- [9] Kishor Katange, Gursewak Singh and **Niteshkumar Khonde** (2022) Sediment characteristics and clay mineral assemblage of modern Kori Creek sediments, Kachchh basin, western India. 1st Indian Quaternary Congress (IQC) 2022 Virtual Conference hosted by Association of Quaternary Researchers (AOQR), India.
- [8] Gursewak Singh, Kishor Katange, **Niteshkumar Khonde** and AD Singh (2022) Foraminiferal content and sedimentological studies on the modern Kori Creek sediments from Great Rann of Kachchh, western India. XXVIII Indian Colloquium on Micropalaeontology and Stratigraphy (ICMS), to be held between 15-17th February 2022, Organised by Department of Environmental Sciences, Savitribai Phule Pune University, Pune, INDIA.
- [7] **Khonde N**, Maurya DM, Bushan R and Chamyal LS (2014) Geochemical studies on sediment cores from the Great Rann of Kachchh, Western India. *In* National Conference on, "Climate change & Environmental Sustainability: Geological Records from Poles to Tropics" held during at Centre of advanced study in Geology, University of Lucknow-226007.
- [6] **Khonde N**, Maurya DM and Chamyal LS (2013) Geomorphology of the Great Rann of Kachchh, Western India. *In* IGI-2013 jointly organized by Department of Geology and Department of Geography at The M. S. University of Baroda, Vadodara-390002.
- [5] **Khonde N**, Maurya DM, Das Archana and Chamyal LS (2012) Sedimentary characteristics and clay mineralogy of the subsurface sediments of the Great Rann of Kachchh, western India: A preliminary evaluation from two shallow cores. *In* DST sponsored Field workshop and Brain storming session Organized at KSKV Kachchh University, Bhuj-370001.
- [4] **Khonde N**, Maurya DM, Das Archana and Chamyal LS (2011) Environmental implication of the raised Holocene marine sediments along the margins of the rocky islands within the Great Rann of Kachchh, western India. *In* XXIII ICMG and Intr. Sym. On Global bioevents in earth's history, Organized by Bangalore University; Bangalore-560056.
- [3] **Khonde N**, Maurya DM, Singh AD and Chamyal LS (2009) Microfaunal studies of Holocene sediments of the Great Rann of Kachchh, Western India. *In* Climatic changes during the Quaternary: Special reference to Polar Regions and Southern Ocean; held at NIO-Goa, Goa-403004.
- [2] Chowksey V, **Khonde N**, Maurya DM and Chamyal LS (2009) Tectonic geomorphology of the Bela and Khadir Islands, Kachchh, Western India. *In* National Conference on Quaternary geological Processes : Natural Hazards and Climate Change, Lucknow-226007.
- [1] **Khonde N**, Chowksey V, Maurya DM and Chamyal LS (2009) Neotectonic framework and geomorphic characterization of the Samakhiali-Lakadiya plain and the little rann of Kachchh, Western India. *In* National Conference on Quaternary geological Processes : Natural Hazards and Climate Change, Lucknow-226007.

Invited talks delivered:

- [2] Delivered talk on, "Coastal Wetlands As Recorders of Climate Change and Sea Level Rise: Implications for Future Sustainability" in virtual international event – "iLEAPS World Wetland Day-2022, A South Asian perspective" organised by the iLEAPS (Integrated Land-

Ecosystem Atmosphere Process Studies), South Asian Chapter on the occasion of World Wetland Day on 2nd February 2022.

- [1] Delivered talk on, “Holocene environments and provenance of the Great Rann of Kachchh basin sediments, Western India” at State Key Laboratory of Marine Geology, Tongji University, Shanghai, CHINA on 7th Oct 2018 during my visit as Visiting Scientist through Open Fund Program.

ACADEMIC SERVICE:

Reviewer for articles : Geosciences Journal (Springer), Current Science, Journal of the Geological Society of India (Spinger), Journal of Palaeosciences (JoP)

Reviewer for edited volume : Geological Society of London (GSL), Springer Nature Publishers, Elsevier Publishers

Editorial Member : Review editor in Frontiers in Earth Science *since* Dec-2021

STUDENT SUPERVISION:

Masters Dissertation: 1) Ms. Shreya Kundu, Department of Geology, Banaras Hindu University (BHU), Varanasi, UP, INDIA (2021)

Doctoral Degree: 1) Mr. Kishor V. Katange, Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow (enrolled in Ph.D. program through AcSIR Dec-2020).

2) Mr. Gursewak Singh, Birbal Sahni Institute of Palaeosciences (BSIP), Lucknow (enrolled in Ph.D. program through AcSIR June-2021).

GRANTS, SCHLORSHIP & ACHEIVEMENTS

2018 Research article published in Scientific Reports Khonde et al. 2017 was among the top 100 most read articles in the year 2017 out of total 1500 articles published by the journal in Earth Sciences.

2016-2019 Science and Engineering Research Board (SERB), New Delhi, “Post LGM sedimentation pattern and environmental changes in the great Rann of Kachchh basin, Western India”, (PI): INR 29,92,000 or equivalent to \$ 44,000.

2017-2018 Science and Engineering Research Board- Indo-US Postdoctoral Fellowship: \$ 40,500 at Woods Hole Oceanographic Institution, USA

2017-2018 Woods Hole Oceanographic Institution, Woods Hole, one time grant for foreign Post-doctoral Fellow \$700.

2014-2016 Physical Research Laboratory (PRL) - Post Doctoral Fellowship award INR 70,00,00 or equivalent to \$ 10,200.

2012-2014 Council of Scientific and Industrial Research (CSIR) – Senior Research Fellowship (SRF)- INR 4,72,000 or equivalent to \$ 7000.

- 2009-2012 Department of Science and Technology (DST)- Junior Research Fellowship (JRF) INR 4,20,000 or equivalent to \$ 6200.
- 2008-2009 Department of Science and Technology (DST)- Project Fellow (PF)- INR 1,20,000 or equivalent to \$ 1800.

OTHER GRANTS/AWARDS

- 2017 Full funding received for attending IODP workshop on “Land-Ocean interactions across the Indian Ocean: Toward Regional Integration of Recent Drilling Results” held during 10-12 July 2017 at University of Rhode Island, RI, USA.
- 2015 INQUA-travel grant to attend XVIII INQUA-2015 held at Nagoya, JAPAN.
- 2013 INSA-CSIR-DAE/BRNS-CICS Travel Fellowship Programme-2013 to attend 125th Geological Society of America Annual Meeting and Exposition held at Denver, USA.
- 2013 Council for Scientific and Industrial Research (CSIR)-Travel Grant for Research Scholar to attend 125th Geological Society of America Annual Meeting and Exposition held at Denver, USA in 2013
- 2012 Department of Science and Technology (DST)- Young Scientist Travel grants to participate in 5th International School on Foraminifera, at Urbino University, Urbino, Italy-2012.
- 2011 Council for Scientific and Industrial Research -National Eligibility Test for Lectureship (CSIR-NET-LS) -2011

FIELD/LAB BASED TRAINING PROGRAMS

- [5] IODP workshop on “Land-Ocean Interactions Across the Indian Ocean: Toward Regional Integration of Recent Drilling Results” held during 10-12 July 2017 at University of Rhode Island, RI, USA.
- [4] DST-SERB Winter School on, “Quaternary Geology and Climate Change” held during 6th to 19th January 2014 at Department of Geology, Pune University, Maharashtra, INDIA.
- [3] MoES Sponsored “Training Program on Active Tectonics”, held during 21st to 28th December 2013 at Department of Geology, Faculty of Science, The M. S. University of Baroda, Gujarat, INDIA.
- [2] “5th International School on Foraminifera”, held at Urbino University, during 10th to 20th June 2012, Urbino, ITALY.
- [1] DST Training Course on, “Application of radiogenic isotopes in geochronology and geochemistry” held during 15th to 20th December 2008 at Pondicherry University, Puducherry, INDIA.

SKILLS

Software/Statistics Sigma Plot, Grapher, Photoshop, Corel Draw, MS Office etc

Field/Laboratory	Geomorphic mapping, sediment coring-logging, particle size analysis, micropalaentology (foraminifera), XRD clay mineralogy, continuous XRF and radiography, elemental geochemistry, radiogenic isotopes ($^{87}\text{Sr}/^{86}\text{Sr}$, $^{144}\text{Nd}/^{143}\text{Nd}$), stable isotopes ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$, $\delta^{18}\text{O}/\delta^{16}\text{O}$).
Languages	English, Hindi, Marathi, Gujarathi (partially)

Niteshkumar N. Khonde