

RAJ KUMAR SINGH

Educational Qualification

Degree	Discipline	Year	School
Ph.D.	Geology and Geophysics	2009	Indian Institute of Technology Kharagpur

Awards/Honours

Selected for INSA, New Delhi, International Collaborative/Exchange Program-2015
Mani Shanker Shukla Gold Medal of The Palaeontological Society of India - 2013
Qualified GATE, 2002.
Qualified CSIR-JRF, December 2001.
Qualified CSIR (NET) - LS, July 2001.
La-Touche Medal in Geology, for 2000 – 2001 from MGMI.
B.H.U. medal for securing highest marks in M.Sc. (Geology) Examination 2001
Late Prof. Rajnath Medal for securing highest marks in Paleontology in M.Sc. (Geology) Examination 2001
Second Rank in B.Sc. (Geology) Examination of N.E.H.U., Shillong, 1999

Research/Career profile

- **Guest scientist** at Institute of Geosciences, Christian Albrechts University Kiel, Germany (May – July 2015)
- **Shipboard scientist** of Integrated Ocean Drilling Program (IODP) expedition - 346 (Asian Monsoon; July – September 2013)
- **Assistant Professor**, School of Earth, Ocean and Climate Science, IIT Bhubaneswar (May 2013 onwards)
- **Scientist 'B'**, Wadia Institute of Himalayan Geology, Dehradun (September 2011 to May 2013)
- **Assistant Hydrogeologist**, Central Ground Water Board, Ministry of Water Resources, Govt. of India (From January 2004 to September 2011)
- **Junior Research Fellow (CSIR)**, Department of Geology and Geophysics, Indian Institute of Technology, Kharagpur (March 2002 to January 2004)

Current Research Interest

Paleoclimatology, Paleoceanography, Marine Micropaleontology, Sedimentology, Hydrogeology

Ongoing Sponsored Research Projects

- (a) Paleoclimatology and Paleoceanography of the Japan Sea
SRIC, Indian Institute of Technology Bhubaneswar
- (b) Millennial to centennial scale variability in the Asian summer monsoon: Foraminiferal perspective from the East China Sea
NCAOR, Goa, MoES, Govt. of India

Publications

1. Dutt, S., Gupta, A.K., Clemens, S., Cheng, H., **Singh, R.K.**, Kathayat, G., Edwards, R.L., 2015. Abrupt changes in Indian Summer Monsoon strength during 33,800 to 5,500 yr BP. *Geophysical Research Letters*, DOI: 10.1002/2015GL064015.
2. Dwivedi, S.N. and **Singh, R.K.**, 2015. Inter-aquifer water transfer through combination well for artificial recharging of the deeper aquifer system in Patna urban area. *Current Science*, 108(7), 1219-1221.
3. Expedition 346 Scientists, 2015. Proceedings of the Integrated Ocean Drilling Program Volume 346 Expedition Reports. Doi:10.2204/iodp.proc.346.2015
4. Tiwari, S.K., **Singh, R.K.**, Singh, J., Gupta, A.K., Bartarya, S.K. and Rai S.K., 2015. Impact of limestone mining activities on major ion geochemistry of Krem Markhyrdop water, Meghalaya, India. *Himalayan Geology*, 36(1), 74 – 80.
5. **Singh, R.K.** and Gupta, A.K., 2014. Miocene history of Indian Monsoon: a review of marine records. Special publication of the palaeontological society of India, 5, 101-109.
6. Expedition 346 Scientists, 2014. Asian Monsoon: onset and evolution of millennial-scale variability of Asian monsoon and its possible relation with Himalaya and Tibetan Plateau uplift. IODP Preliminary Report, 346. doi:10.2204/iodp.pr.346.2014
7. Saha, D., Dwivedi, S.N. and **Singh, R.K.**, 2014. Aquifer System Response to Intensive Pumping in Urban Areas of the Gangetic Plains, India- the case-study of Patna. *Environmental Earth Sciences*, 71, 1721-1735
8. Gupta A.K., Mohan, K., Das M., and **Singh, R.K.**, 2013. Solar forcing of the Indian Summer monsoon variability during Ælleød period, *Nature Scientific Reports*, 3:2753 DOI:10.1038/srep02753
9. Verma, S., Gupta, A.K. and **Singh, R.K.**, 2013. Variations in deep-sea benthic foraminifera at ODP Hole 756B, southeastern Indian Ocean: Evidence for changes in deep ocean circulation. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 376, 172-183
10. Gupta A.K., **Singh, R.K.** and Verma, S., 2013. Deep-sea paleoceanographic evolution of the eastern Indian Ocean during the late Oligocene-Pleistocene: Species Diversity trends in benthic foraminifera. *Current Science*, 104(7), pp. 1-7
11. **Singh, R.K.**, Gupta A.K. and Das M., 2012. Paleoceanographic significance of deep-sea benthic foraminiferal species diversity at southeastern Indian Ocean Hole 752A. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 361, pp. 94-103
12. **Singh, R.K.** and Gupta A.K., 2010. Deep-sea benthic foraminiferal changes in the eastern Indian Ocean (ODP Hole 757B): their links to deep Indonesian (Pacific) flow and high latitude glaciation during the Neogene. *Episodes*, 33(2), pp. 74-82
13. Bhaumik, A.K., Gupta, A.K., Mohan, K. and **Singh R.K.**, 2008. Disappearance of *Stilostomella lepidula* (Schwager) across the mid-Pleistocene Transition and its palaeoceanographic implication. *Current Science*, 94(6), 758-764
14. **Singh R.K.** and Gupta A.K., 2005. Abrupt changes in Benthic Foraminiferal species diversity and their link to the high latitude Glaciations during the Neogene. *Journal of Foraminiferal Research*, 35(3), pp. 219–227
15. **Singh, R.K.** and Gupta A.K., 2004. Late Oligocene-Miocene paleoceanographic evolution of the southeastern Indian Ocean: Evidence from deep-sea Benthic foraminifera (ODP Site 757). *Marine Micropaleontology*, 51, pp.153-170
16. Gupta A.K., **Singh, R.K.**, Joseph, S. and Thomas, E., 2004. Linked to global cooling or to the initiation of the Indian monsoons? *Geology*, 32 (9), pp.753-756

Review Article

17. Das, M., Gupta, A.K., **Singh, R.K.** and Bhaumik, A.K., 2002. Significance of Stable isotopes in Paleoclimatology and Paleoceanography - A Review. Indian Journal of Geochemistry, 17, pp.13-23

Popular article

18. **Singh, R.K.**, 2013. Arsenic pollution in Ground Water (in Hindi). Asmika, vol. 19, of Wadia Institute of Himalayan Geology.
19. **Singh, R.K.**, Gupta, A.K. and Das, M., 2004. Monsoon and its effect on Indian subcontinent (in Hindi). Samudrika, Vol.11 of Geological Survey of India.

Full paper in seminars / conferences

20. Chandra P.C., Agrawal A.K., Saha D., **Singh R.K.** and Singh S.K., 2010. Groundwater Management Options in Bihar Under Possible Impact of Climate Change. In National Seminar on "Climate Change and its impact on Water Resources" organized by Indian Water Resources Society, Patna Centre on 23rd April 2010 at Patna, Bihar
21. Dwivedi S.N., **Singh R.K.** and Chandra P.C., 2010. Recharging the depleting deeper aquifers of Patna. In Proceedings of IVth World Aqua Congress organized at India Habitat Centre New Delhi, during 8 – 10th December 2010.

Chapter in a book

22. Dwivedi S.N., **Singh R.K.** and Saha, D., 2011. Patna Urban, Bihar. In Ground Water Scenario in major cities of India. Central Ground Water Board, Government of India, Released May 2011 (Available at <http://cgwb.gov.in/documents/GW-Senarioin%20cities-May2011.pdf>)

Others

Authored/Co-authored various technical reports in Central Ground Water Board, Ministry of Water Resources, Govt. of India.

Selected Abstract in Seminar/Conferences/Workshop

1. **Singh, R.K.**, Gupta A.K. and Flower, B.P., 2003. Paleoceanographic changes at ODP site 757B, eastern Indian Ocean during Plio-Pleistocene. EILQUEC and POLTRAIN – 2003. Late Quaternary Environmental Change – Emerging Issues. An International PAGES Workshop cum Training Programme on Global Change held during 10th-15th February 2003 at Pondicherry.
2. **Singh, R.K.** and Gupta, A.K., 2003. Late Oligocene-Miocene paleoceanographic evolution of the southeastern Indian Ocean: Evidence from deep-sea Benthic foraminifera (ODP Site 757). XIX Indian colloquium on Micropaleontology and Stratigraphy and Symposium on recent developments in Indian Ocean Paleoceanography and Paleoclimate held during 9th– 11th October, 2003 at Varanasi.
3. Gupta A.K., Mohan, K. and **Singh, R.K.**, 2006. Abrupt increase in the mixed-layer thickness driven by the constriction of Indonesian Seaway during 3.2-2.75Ma: A precursor to North Atlantic glaciations. In Influence of Indonesian Throughflow Variability on Tropical Indian Ocean during 19th -23rd July 2006 at Institute of Geosciences, Kiel, Germany.
4. Dwivedi S.N., **Singh R.K.** and Ganguly S.S., 2009. Hydrogeological Evaluation of Patna Urban Area. In Regional Workshop on Geogenic contamination of Groundwater organized by Central Ground Water Board, Patna during 21st-22nd March, 2009 at IGSC, Patna.

5. Saha D., Sahu S., Shukla R.R., **Singh R.K.**, Verma V.S., Upadhyay S., Singh T.B.N., Dwivedi S.N., Sonkusare M.M. and Shreehari S.M.S., 2009. Arsenic free deeper aquifers in Middle Ganga Plain-Sustainable source for potabale drinking water supply. In Regional Workshop on Geogenic contamination of Groundwater organized by Central Ground Water Board, Patna during 21st-22nd March, 2009 at IGSC, Patna.
6. Dwivedi S.N., **Singh R.K.** and Ganguly S.S., 2010. Quantifying depletion from aquifer storage in response to heavy pumping in Patna Urban area. In UGC-sponsored national seminar on “Sustainable Development of Water Resources in Indo-Gangetic plain: Challenges and Constraints during 12th -13th March, 2010 at Department of Geology, Patna University, Patna.
7. Agrawal A.K., Mandal M.K. and **Singh R.K.**, 2010. Targeting fluoride free aquifer in the northernmost fringe area of Chotanagpur plateau. In Regional Workshop on “Exploration, Development and Management of Ground Water In Hard Rocks with special reference to Jharkhand State” organized by Central Ground Water Board, Patna during 25th-26th March 2010 at SKIPA auditorium Ranchi.
8. Dwivedi S.N., Shukla, R.R., **Singh R.K.** and Upadhyay, S., 2010. A rapid alternative approach for estimating transmissivity of high potential aquifers in Mid Ganga Plain. In International Conference on Geophysical Science – Energy, Climate Change and Evolution of Human Society during 21-23rd December, 2010 at Department of Geophysics, Banaras Hindu University, Varanasi.
9. Dwivedi S.N., **Singh R.K.** and Chandra P.C., 2011. Sustainability of Deeper High Yielding Aquifer in Urban Areas in Middle Ganga Basin, Bihar India. In Singapore International Water Week during 4-8th July 2011 at Singapore.
10. Dwivedi S.N., **Singh R.K.**, and Saha, D., 2011. Sustaining the aquifer based water supply in Patna urban area - a fast growing million plus city in eastern India. In Stockholm International Water Week during 4-7th August 2011 at Stockholm.
11. **Singh R.K.**, Singh, J., Tiwari, S., Gupta, A.K., Bartarya, S.K. and Rai S.K., 2012. Impact of Limestone mining and Cement factory on the water quality of Cave-A case study from Meghalaya, India. In National Conference on Green Earth with focus on Himalaya during 18th & 19th October, 2012at Wadia Institute of Himalayan Geology, Dehradun.
12. **Singh R.K.**, 2013. Integrated Ocean Drilling Program Expedition – 346 (Asian Monsoon): Onset and evolution of millennial-scale variability of Asian monsoon and its possible relation with Himalaya and Tibetan Plateau uplift. In Indian IODP participants meet during 14-15th January, 2013 at National Centre for Antarctic and Ocean Research, GOA
13. **Singh, R.K.** and Gupta A.K., (2013) Paleooceanographic changes in the eastern Indian Ocean during the Plio-Pleistocene . In XXIV Colloquium of Micropaleontology and Stratigraphy at Wadia Institute of Himalayan Geology, Dehradun, from 18 – 20th November, 2013.
14. **Singh, R.K.**, Das, M., Abhijeet, Barik, S.S. and Kanjilal, A., (2014) Pleistocene Planktic Foraminifera proxy – a tool to understand Asian monsoon variations. In: Climate Change and Environmental Sustainability: Geological Records from Poles to Tropics at Lucknow University Lucknow on 9-10th September 2014.

15. Abhijith, U.V. **and Singh R.K.**, 2015. Assessment of Late Quaternary variation in Asian Monsoon using foraminifera from the sediments of the IODP site U1429A. National Climate Science Conference, during 2-3rd July 2015 at IISc, Bangalore.
16. Barik, S.K., **Singh, R.K.** and Tripathy, S. 2015. Assessment of Chilika lake sediments as paleo-proxy for climate reconstruction. National Climate Science Conference, during 2-3rd July 2015 at IISc, Bangalore.