

**DR. SANDEEP KUMAR GUPTA**  
**CSIR-NGRI, HYDERABAD, INDIA**

[http://scholar.google.co.in/citations?user=q4\\_Eln0AAAAJ](http://scholar.google.co.in/citations?user=q4_Eln0AAAAJ)

**FIELD OF SPECIALIZATION:**

Seismology, Seismic Imaging, Seismotectonics, Geodynamics.

**EDUCATION:**

2004 Ph.D. Geophysics, Osmania University, Hyderabad, India  
1997 M. Tech. Applied Geophysics, University of Roorkee (now IIT) Roorkee, India  
1994 B.Sc. Physics, Chemistry and Math, CCS University, Meerut, India

**PROFESSIONAL EXPERIENCE:**

03/11- **Senior Scientist**, CSIR-National Geophysical Research Institute, Hyderabad, India  
03/07- 03/11 **Scientist**, CSIR-National Geophysical Research Institute, Hyderabad, India  
03/04-03/07 **Jr. Scientist**, CSIR-National Geophysical Research Institute, Hyderabad, India  
09/99-03/04 **Project Fellow, Senior Research Fellow and Research Associate**, CSIR-NGRI, Hyderabad, India  
09/97-09/99 **Project Assistant**, University of Delhi, New Delhi, India

**VISITING POSITIONS:**

01/12 - 04/12 Raman Research Fellow, IPG Paris (IPGP), France  
03/07 - 03/08 BOYSCAST Fellow, Tohoku University, Sendai, Japan

**TEACHING EXPERIENCE:**

Assistant Professor in AcSIR.

**RECOGNIZED RESEARCH SUPERVISOR/GUIDE FOR PH. D.**

Academic of Scientific and Innovative Research (AcSIR)  
Osmania University, Hyderabad  
SRTMU, Nanded  
Andhra University, Vishakapatnam  
Indian School of Mines (ISM), Dhanbad

**SERVICE:**

**Life Member** : Association of Exploration Geophysicist (AEG), India  
**Life Member** : Society of Petroleum Geophysicist (SPG), India  
**Life Member** : Indian Society of Earthquake Science (ISES)  
**Council Member** : Indian Society of Earthquake Science (ISES) (2018 - )  
**Fellow** : Society of Earth Scientists  
**Assistant Editor** : Science India Web Portal – Physical Sciences  
**Reviewer** : JGR (Solid Earth), Tectonophysics, PEPI, Marine Geology, J. of Asian Earth Sciences, Island Arc, PAGEOPH, Annals of Geophysics, J. Geological Society of India, Current Science, Natural Hazards, Project Proposals in IIT  
**Examiner** : Ph.D. Thesis evaluation

### Awards and Honors:

National Geoscience Award – 2014, Ministry of Mines, GOI (2016)  
Associate Fellow in Andhra Pradesh Akademi of Science, 2014.  
Raman Research Fellowship from CSIR, 2011.  
BOYSCAST Fellowship by Govt. of India 2006.  
ONGC-AEG award for best Ph.D. thesis in Geophysics in 2004.  
University Medal from University of Roorkee (now IIT) Roorkee in 1997.

### Research works in Wikipedia / Media :

- **Magmatic underplating beneath Laccadive island** : **Wikipedia**  
[https://en.wikipedia.org/wiki/Magmatic\\_underplating](https://en.wikipedia.org/wiki/Magmatic_underplating)
- **Andaman Crustal Structure – Times of India**  
<https://timesofindia.indiatimes.com/city/hyderabad/New-model-to-track-quakes-in-Andamans/articleshow/55681206.cms>
- **Volcanic Passive Margin, East Antarctica – Deccan Chronical**  
<https://www.deccanchronicle.com/science/science/300817/scientists-at-hyderabad-based-ngri-find-volcanic-margins-in-east-antarctica.html>
- **Active fault beneath Tehri** –
  - (a) <http://www.deccanherald.com/content/297401/tehri-dam-sitting-active-fault.html>
  - (b) <http://www.indiatvnews.com/news/india/tehri-dam-sitting-on-an-active-fault-indian-seismologists-19020.html>
  - (c) [http://zeenews.india.com/news/eco-news/tehri-dam-sitting-on-an-active-fault-indian-seismologists\\_815630.html](http://zeenews.india.com/news/eco-news/tehri-dam-sitting-on-an-active-fault-indian-seismologists_815630.html)
  - (d) Dainik Jagran and Times of India

### PUBLICATIONS

#### Peer-reviewed Journal Publications:

1. **Sandeep Gupta**, Nagaraju Kanna, Sudesh Kumar, K. Sivaram, 2018, Crustal thickness and composition variation along the Western Ghats of India through teleseismic receiver function analysis, *J. Geological Society of India*. (Accepted).
2. Nagaraju Kanna, **Sandeep Gupta** and K.S. Prakasam, 2018, Micro-Seismicity and Seismotectonic study in Western Himalaya–Ladakh-Karakoram, using local broadband seismic data, *Tectonophysics*. 726, 100-109, <https://authors.elsevier.com/c/1WWdK98wdltqP>
3. **Sandeep Gupta**, Nagaraju Kanna, A. Akilan, 2017, Volcanic passive continental margin beneath the Maitri station in central DML, East Antarctica: constraints from crustal shear velocity through receiver function modelling. *Polar Research*, 36(1), 1332947, doi 10.1080/17518369.2017.1332947.
4. Sanjay Singh Negi, Ajay Paul, Simone Cesca, Kamal, Marius Kriegerowski, P. Mahesh, **Sandeep Gupta**, 2017, Crustal velocity structure and earthquake processes of Garhwal-Kumaun Himalaya: Constraints from Regional Waveform Inversion and Array Beam Modeling. *Tectonophysics*, 712-713, 45-63, doi:10.1016/j.tecto.2017.05.007.

5. Nagaraju Kanna, K.S. Prakasam, **Sandeep Gupta**, 2017, Seismic character of Moho beneath the NW Himalaya and Ladakh inferred from regional earthquake travel time data, *Pure and Applied Geophysics*, 174(3), 835-847, doi:10.1007/s00024-016-1451-4.
6. **Sandeep Gupta**, Kajaljyoti Borah, Gokul Saha, 2016, Continental like crust beneath the Andaman Island through joint inversion of receiver function and surface wave from ambient seismic noise, *Tectonophysics*, 687, 129-138, doi:10.1016/j.tecto.2016.09.013.
7. P. Mahesh, **Sandeep Gupta**, 2016, The role of crystallised magma and crustal fluids in intraplate seismic activity in Talala region (Saurashtra), Western India: An insight from local earthquake tomography, *Tectonophysics*, 690, 131-141, doi.:10.1016/j.tecto.2016.05.025.
8. Nagaraju Kanna, K.S. Prakasam, **Sandeep Gupta**, K. Sivaram, Sudesh Kumar, Somasish Bose and B.N.V. Prasad, 2016, Imaging of seismic discontinuities of the upper mantle in the western Himalaya through Receiver Function analysis, *JIGU*, 20(6), 536-543.
9. Kuntal Chaudhuri, Kajaljyoti Borah, **Sandeep Gupta**, 2016, Seismic evidence of crustal low velocity beneath Eastern Ghat Mobile Belt, India, *Physics of the Earth and Planetary Interiors*, 261, 207-216, doi.:10.1016/j.pepi.2016.10.
10. P. Mahesh, **Sandeep Gupta**, Utpal Saikia, S.S. Rai, 2015, Seismotectonics and crustal stress field in the Kumaon-Garhwal Himalaya, *Tectonophysics*, 655, 124-138, doi.:10.1016/j.tecto.2015.05.016.
11. V. Pavan Kumar, K. S. Prakasam, S. S. Rai, and **Sandeep Gupta**, 2015, Upper mantle anisotropy beneath the south Indian shield: influenced by ancient and recent earth processes, *Lithosphere*, 7(2), 108-116, doi:10.1130/L405.
12. Kajaljyoti Borah, S. S. Rai, **Sandeep Gupta**, K. S. Prakasam, Sudesh Kumar, and K. Sivaram, 2014, Preserved and modified mid-Archean crustal blocks in Dharwar craton: Seismological evidence, *Precambrian Research*, 246, 16-34.
13. Kajaljyoti Borah, S. S. Rai, K. S. Prakasam, **Sandeep Gupta**, Keith Priestley and V. K. Gaur, 2014, Seismic Imaging of Crust beneath the Dharwar Craton, India from Ambient Noise and Teleseismic Receiver Function modeling, *Geophy. J. Int.* 197, 748-767, doi.:10.1093/gji/ggu075.
14. S.S. Rai, Kajaljyoti Borah, Ritima Das, **Sandeep Gupta**, Shalivahan, K.S. Prakasam, K. Sivaram, Sudesh Kumar, Rishikesh Meena, 2013, The South India Precambrian crust and shallow lithospheric mantle: initial results from the India Deep Earth Imaging Experiment (INDEX), *J. Earth System Sciences*, 122(6), 1435 – 1453.
15. **Sandeep Gupta**, W.K. Mohanty, R. Prakash, A.K. Shukla, 2013, Crustal Heterogeneity and Seismotectonics of Delhi, India, *Pure and Appl. Geophys.* doi:10.1007/s00024-012-0572-7, 170(4), 607-616.
16. P. Mahesh, S.S. Rai, K. Sivaram, A. Paul, **Sandeep Gupta**, R. Sarma, V.K. Gaur, 2013, One dimensional reference velocity model and precise locations of earthquake hypocenters in the Kumaon- Garhwal Himalaya, *Bull. Seis. Soc. Am.*, doi: 10.1785/0120110328, 103(1), 328-339.
17. **Sandeep Gupta**, P. Mahesh, K. Sivaram and S. S. Rai, 2012, Active fault beneath the Tehri dam, Garhwal Himalaya- seismological evidence, *Current Science*, 103(11), 1343-1347.

18. P. Mahesh, **Sandeep Gupta**, S.S. Rai and P. Rajagopala Sarma, 2012, Fluid driven earthquakes in the Chamoli Region, Garhwal Himalaya: Evidence from local earthquake tomography, *Geophy. J. Int.*, 191(3), 1295–1304, doi: 10.1111/j.1365-246X.2012.05672.x.
19. **Sandeep Gupta**, Santosh Mishra, S.S. Rai, 2010, Magmatic Underplating of crust beneath the Laccadive Island, NW Indian Ocean, *Geophy. J. Int.*, 183(2), 536-542.
20. **Sandeep Gupta**, Dapeng Zhao and S.S. Rai, 2009, Seismic imaging of the mantle under the Erebus hotspot in Antarctica. *Gondwana Research*, 16, 109-118.
21. **Sandeep Gupta**, Dapeng Zhao, M. Ikeda, S. Ueki and S.S. Rai, 2009, Crustal tomography under the Median Tectonic Line in Southwest Japan using P and PmP data. *J. Asian Earth Sciences*, 35(5), 377-390.
22. Ashish, A. Padhy, S.S. Rai and **Sandeep Gupta**, 2009, Seismological evidence for shallow crustal melt beneath the Garhwal High Himalaya, India: implications for Himalayan channel flow, *Geophy. J. Int.*, 177(1), 1111-1120.
23. S. Kiselev, L. Vinnik, S. Oreshin, **S. Gupta**, S.S. Rai, A. Singh, M.R. Kumar and G. Mohan, 2008, Lithosphere of the Dharwar craton by joint inversion of *P* and *S* receiver functions, *Geophys. J. Int.*, 173, 1106-1118.
24. **Sandeep Gupta** and S.S. Rai, 2005, Structure and Evolution of South Indian Crust using Teleseismic Waveform Modelling, *Himalayan Geology*, 26(1), 109-123.
25. S.S. Rai, **S. Gupta**, K. Priestley and V.K. Gaur, 2004, Response - On the efficacy of recent crustal images of the Indian shield from receiver functions by D.S. Ramesh, *Current Science*, 87(5), 582-583.
26. **Sandeep Gupta**, S.S. Rai, K.S. Prakasam, D. Srinagesh, R.K. Chadha, Keith Priestley and V.K. Gaur, 2003, First Evidence for Anomalous Thick Crust Beneath Mid -Archean Western Dharwar Craton, *Current Science*, 84(9), 1219-1226.
27. **Sandeep Gupta**, S.S. Rai, K.S. Prakasam, D. Srinagesh, B.K. Bansal, R.K. Chadha, Keith Priestley and V.K. Gaur, 2003, The Nature of the Crust in Southern India – Implications for Precambrian Crustal Evolution, *Geophys. Res. Letters*, 30(8), 1419, doi:10.1029/2002GL016770.
28. P.K.S. Chauhan, W.K. Mohanty, G.S. Roonwal and **Sandeep Gupta**, 2001, Significance of Seismological Investigation in Delhi and Surrounding Region, DST spl. vol 2 “Seismicity” under “Research Highlights in Earth System Science”, ed: O.P. Verma, Ind. Geol. Congress, pp 55 – 64.

#### Expanded Abstracts:

1. McNaughton, N. J., Sarma, D.S., Ram Mohan, M., **Gupta, S.**, Fletcher, I.R., Gregory, C.J., Dunkley, D.J., Krapez, B., Rasmussen, B., and Wilde, S.A., Gold in India, **Gold14@Kalgoorlie**, Kalgoorlie, W. Australia, 8-10 Oct. 2014.
2. Rai, S., Borah K. **Gupta S.**, K. Suryaprakasam, 2013, Crustal Structure beneath the Dharwar Craton, India, *Mineralogical Magazine*, 77(5), 2021. doi:10.1180/minmag.2013.077.5.18.
3. Mahesh, P., Rai, S.S., Sarma, P.R., **Gupta, S.**, Sivaram, K., and Suryaprakasam, K., 2010, High resolution earthquake location and 3-D velocity imaging of crust beneath the Kumaon Himalaya, in

Leech, M.L., and others, eds., online proceedings for the **25<sup>th</sup> Himalaya-Karakoram-Tibet Workshop: U.S. Geological Survey**, Open-File Report 2010-1099, 2 p.

4. **Sandeep Gupta** and S.S. Rai, 2007, Shear velocity structure of the South Indian Crust using Teleseismic waveform Modelling, *The 21st century COE (Earth Science) International Symposium*, Sendai, Japan.
5. S. Rai, S. Chandra, K.S. Prakasam, T. Vijay Kumar, **S. Gupta**, V. K. Gaur and K. Priestley, 2006, The Low Velocity Upper Mantle Signature from Ladakh-Karakoram: Implications for Indo-Asian Convergence, **21st Himalaya-Karakoram-Tibet workshop**, Cambridge, UK.
6. S.S. Rai, **Sandeep Gupta**, K. S. Prakasam and V.K. Gaur, 2005, Formation and Evolution of Craton in South India- Synthesis from Broadband Seismological Experiment, **International Conference on Precambrian Continental Growth and Tectonism (PCGT)**, Jhansi.

#### INVITED TALKS :

1. A Seismological investigation of the Deccan Volcanic Provinces, 27<sup>th</sup> March, 2015, National Seminar on Environmental, Geological and Geophysical Aspects of South Eastern Deccan Volcanic Province SRTMU, Nanded

#### REVIEW OR NON-TECHNICAL ARTICLE:

**Sandeep Gupta**, 2004, Bhaudhatvik Pindikhaun ka liye Samundra-Manthan ki Avasyakta, Vasundara (NGRI Publication, in Hindi).

#### Summary of Student Activities:

##### CURRENT STUDENTS:

1. Ajai K. Sharma

#### EXTERNAL PROJECTS AS PL/CO-PL (PRESENT AND PAST)

Funding Agency	Project/Investigators	Amount	Period
DST, Govt. of India	Exposing the gold potential of the Neoproterozoic Himalaya of the Dharwar Craton in southern India; under India-Australia Strategic Research Fund (IASRF), Project code : ST040010	Rs. 55 lakh	2011-2014
<b>As Key Researcher (Geophysicist)</b>			
DST, Govt. of India	Broadband seismometer and long period MT surveys over Laccadive Ridge and Barren Island.	Rs. 9.15 lakh	2004 - 2005
<b>As Co-PI</b>			

<b>Funding Agency</b>	<b>Project/Investigators</b>	<b>Amount</b>	<b>Period</b>
CSIR- Govt. of India	Evolution and Modification of Indian Cratons- Seismological Perspective (Under INDEX 12 <sup>th</sup> Five-year plan project) <b>As Co-PI : 04/2012 - 08/2014</b> <b>As PI : 09/2014 – 03/2017</b>	Rs. 125.00 lakh	2012-2017