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PERSONAL DETAILS

Name (as in Passport): Uma Shankar
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Permanent Address: Department of Geophysics
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EDUCATIONAL QUALIFICATIONS

- PhD on topic 'Assessment of Gas Hydrates Resources in the Kerala-Konkan Basin- Western India' from Osmania University, Hyderabad, India in July 2006.
- M. Sc. (Tech.) in 'Exploration Geophysics' from Banaras Hindu University (BHU), Varanasi, Uttar Pradesh, India in 1999.
- B. Sc. (Hons.) in Mathematics from Banaras Hindu University (BHU), Varanasi, Uttar Pradesh, India in 1996.
- Intermediate from Uttar Pradesh Board, India in 1993.
- Matriculation from Uttar Pradesh Board, India in 1990.

POST DOCTORAL

- October 2013 to October 2014- Collage of Oceanic and Atmospheric Science, Oregon State University, Corvallis, OR 97331-5503, USA as Visiting Scientist and Courtesy Faculty under prestigious Indo-US Fellowship-2013.
- May 2009 to May 2010- Pacific Geoscience Center (Geological Survey of Canada, Pacific), West Sannich, Sidney, BC and Victoria University, Victoria, British Columbia, Canada as Visiting Scientist under prestigious BOYSCAST Fellowship-2008.
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ACADEMIC AWARDS

- **Krishnan Medal-2016**, Indian Geophysical Union, Hyderabad.
- **AEG-2017** Best poster award in the 39th annual convention, seminar and exhibition.
- **Indo-US Research Fellowship-2013**, Indo-US Science and Technology Forum (IUSSTF), New Delhi.
- **Fellow (elected-2103)**, Geological Society of India, Bangalore.
- **Associate Fellow-2012**, Andhra Pradesh Akademi of Sciences.
- **Young Scientist Award 2010-11**, Council of Science and Technology, Uttar Pradesh (CSTUP).
- **BOYSCAST Fellowship 2008-2009**, DST, Govt. of India, New Delhi.

RESEARCH PROJECTS

Funding Agency	Title of projects	Duration	Sanctioned Amount	Completed/ongoing
Ministry of Earth Science, New Delhi	Investigation of site properties for seismic hazard analysis in and around Gorakhpur city, Uttar Pradesh (India) using microtremor measurements	3 years	Rs. 81,50,240	Ongoing
National Centre for Polar and Ocean Research, Goa	Gas hydrate characterization and assessment from seismic and log data in the Hikurangi margin, New Zealand	2 years	Rs. 17,20,000	Completed
GEOPIC, ONGC Dehradun	Integrated seismic imaging and joint inversion	1 years	Rs. 76,66,602	Ongoing

ADMINISTRATIVE EXPERIENCE

- **Academic council member** of Dr. Rammanohar Lohia Avadh University, Faizabad, Ayodhya.
- **Member**, Selection committees for faculty recruitments, Siddharth University, Kapilvastu, Siddharth Nagar.
- **Member**, Selection committees for faculty recruitments, Dr. Rammanohar Lohia Avadh University, Faizabad, Ayodhya.
- **Executive committee member** of Indian Geophysical Union (IGU) for year 2020-2022.
- **Warden** International house complex, BHU, Varanasi.
- **Member** of PPC (Policy Planning Committee), Geophysics, BHU, Varanasi.
- **Member** of DRC (Departmental Research Committee), Geophysics, BHU, Varanasi.
- **Member** of Admission Committee, UG & PG courses, Institute of Science, BHU, Varanasi.
- **Member** of IQAC, Institute of Science, BHU, Varanasi.
- **Member** of NEP-2020, Institute of Science, BHU, Varanasi.
- **Nodal person** of Space audit committee, Department of Geophysics, Institute of Science, BHU, Varanasi.
- **Chairman** of Space audit committee, Department of Geophysics, Institute of Science, BHU, Varanasi.
- **Chairman** of Student grievance committee, Department of Geophysics, Institute of Science, BHU, Varanasi.

PROFESSIONAL ACTIVITIES

- **Member of board of studies** Dr. Rammanohar Lohia Avadh University, Faizabad, Ayodhya.
- **Life Member** of Association of Asia Oceanica Geoscience Society (AOGS), Singapore.
- **Life Member** of Society of Petroleum Geophysicists (SPG), India.
- **Life Member** of Geological Society of India.
- **Life Member** of Indian Geophysical Union (IGU).
- **Life Member** of Association of Exploration Geophysicist (AEG).
- **Life Member** of The Indian Science Congress Association.

COUNTRY VISITED

- **Greece in 2019** During Microtremor measurement equipment training
- **Australia in 2017-18** During International Ocean Discovery Program (IODP) Expedition (372)
- **New Zealand in 2017-18** During IODP Expedition 372
- **USA in 2013-14** During Indo-US Fellowship

- **Japan in 2012** Presented paper in 8th International Workshop on Methane Hydrate
- **Scotland (UK) in 2011** Presented paper in 7th ICGH conference at Edinburgh
- **Canada in 2009-10** During BOYSCAST Fellowship
- **Germany in 2007** During OBS training in factory at GeoPro, Hamburg and in Baltic Sea
- **Indonesia in 2006:** During OBS cruise on board Marion Dufresne in Sumatra region
- **Sri Lanka in 2006:** During OBS cruise on board Marion Dufresne in Sumatra region
- **Canada in 2005:** Heat Flow probe equipment factory training
- **Hong Kong in 2005:** During Heat Flow probe equipment factory training
- **Bangkok in 2005:** During Heat Flow probe equipment factory training
- **Russia in 2004:** Under ILTP Program of gas hydrate
- **Singapore in 2004:** Presented technical paper in 1st AOGS conference

PROFESSIONAL EXPERIENCE

06/02/2019-Continuing Professor, Department of Geophysics, Institute of Science, BHU, Varanasi, India
 06/02/2016-06/02/2019 Associate Professor, Department of Geophysics, Institute of Science, BHU, Varanasi, India
 31/01/2010-05/02/2016 Senior Scientist, National Geophysical Research Institute, Hyderabad, India
 31/01/2006-31/01/2010 Scientist, National Geophysical Research Institute, Hyderabad, India
 31/01/2002-31/01/ 2006 Jr. Scientist, National Geophysical Research Institute, Hyderabad, India

VISITING POSITIONS

05/09 – 05/10 BOYSCAST Fellow, Pacific Geosciences Center, Geological Survey of Canada, Canada
 10/13 – 10/14 Indo-US Fellow, Oregon state University, USA.

TEACHING EXPERIENCE

Since February 2019 continuing Professor, February 2016- February 2019 Associate Professor, Department of Geophysics, Institute of Science, BHU, Varanasi and teaching various subject such as Seismic methods, Seismology, Remote sensing, Signal processing, Geo-exploration & surveying, Petroleum exploration and stratigraphy, Marine Geophysics etc. to the M. Sc. (Tech.) student.

FIELD EXPERIENCE

- Participated in International Ocean Discovery Program (IODP) Creeping Gas Hydrate Slides and Hikurangi LWD Expedition (372) from 26th November 2017 to 4th January 2018.
- Participated in NGHP Expedition-02 onboard R/V CHIKYU during the period 1st to 15th May, 2015 in the Krishna-Godavari Basin for identification of sites/areas with high saturation of gas hydrates in sand facies.
- Participated in OBS testing and commissioning along off Kochi region on board SAGAR DHWANI during the period 27th to 29th April, 2008.
- Participated in Heat flow probe testing experiment in Goa and Chennai offshore regions on board ORV SAGAR KANYA during the period 4th April 2007 to 13th April, 2007.
- Participated in Indo-Russian joint scientific cruise for gas hydrate core sampling in Saurashtra Offshore and Kerala-Konkan basin of western continental margin of India, on board Russian research vessel ORV Academic Boris Petrov during the period 17th November 2006 to 27th November, 2006.
- Participated in Sumatra Andaman Grate Earthquake Research (SAGER) program on board French research vessel R/V Marion Dufresne for the deployment of Ocean Bottom Seismometer (OBS) during the period 6th July 2006 to 9th August, 2006.
- Participated in the 5th leg cruise operations in high Arabian Sea on board M/V MEZEN for carrying-out Marine Multi-channel Seismic Surveys for 'Legal continental Shelf' (LCS) during the period 4th January 2003 to 14th February 2003.
- Participated in Geophysical Deep water Research Observatory for multidisciplinary (GEODROME) experiments on board ORV SAGAR KANYA in Bay of Bengal during the period 12th October 2003 to 22nd October 2003.

- Actively participated in Gravity and magnetic survey at world highest Himalayan region LADAKH in the month of August - September 2001.

TRAININGS

Instrument Training

- Marine Heat flow probe training in factory of Applied Micro Systems, British Columbia, Canada (one week in 2005).
- OBS training in factory of GeoPro, Hamburg, Germany and in Baltic Sea of Germany (one week in 2007).
- Microtremor measurement equipment training at Geobit, Solomou str Patra 26222, Greece (Ten days in 2019).

INTERNATIONAL / NATIONAL JOURNALS SCIENTIFIC PUBLICATIONS

SCI JOURNALS

1. Sangeeta Kumari, A. P. Singh, **Uma Shankar**, Birender Pratap, Arun Kumar Gupta (2022) Study of local site conditions for seismic hazard assessment at the BHU campus, Varanasi, North India using Ambient Noise measurements, *Journal of Geological Society of India*, Vol. 98, pp1531–1540. <https://doi.org/10.1007/s12594-022-2208-6>.
2. Ashish Kumar, Chandrai Murmu, Raju Vemula, **Uma Shankar** and Nabendu Majumdar (2022) Delineation of subsurface geological structures in parts of Bongaigaon, Kokrajhar and Dhubri districts of Assam by gravity and magnetic methods, *Journal of Indian Geophysical Union*, Vol. 26(2), pp 78–93.
3. Manoj K. Bhartee, Nani M. Dutta, Yadunath Jha and **Uma Shankar** (2022) Improvement of structural imaging in fold belt area by swath-line seismic data acquisition, *Geohorizons*, Vol. 27(1), pp 51–59.
4. **Uma Shankar**, Pawan Kumar Yadav, A. P. Singh and Arun Kumar Gupta (2021) Evaluation of site-specific characteristics using Microtremor measurements in the Gorakhpur City of Uttar Pradesh, India, *Journal of Earth System Science*, Vol. 130, pp 188. <https://doi.org/10.1007/s12040-021-01690-3>.
5. Niptika Jana, Astha Singh, Ashwani Kant Tiwari, Tuna Eken, Arun Singh, Chandrani Singh and **Uma Shankar** (2021) Seismic anisotropy and mantle deformation beneath Eastern Ghats Mobile Belt using direct-S waves, *Precambrian Research*, Vol. 360, pp 106215. doi: <https://doi.org/10.1016/j.precamres.2021.106215>.
6. **Uma Shankar**, Sangeeta Kumari, Pawan Kumar Yadav, A P Singh, Arun Kumar Gupta (2021) Microtremor measurements in the India's holy city, Varanasi for assessment of site characteristics, *Quaternary International*, Vol. 585, pp 143–151.
7. **Uma Shankar**, M., Ojha, R., Ghosh (2021) Assessment of gas hydrate reservoir from inverted seismic impedance and porosity in the northern Hikurangi margin, New Zealand, *Marine and Petroleum Geology*, Vol. 123, 10475. doi: <https://doi.org/10.1016/j.marpetgeo.2020.104751>.
8. **Uma Shankar**, Pawan Kumar Yadav, and Sangeeta Kumari (2020) Site response study in Mirzapur district, Uttar Pradesh using Microtremor measurements, *Journal of Indian Geophysical Union*, Vol. 24(6), pp 1–9.
9. Philip M. Barnes, Laura M. Wallace, Demian M. Saffer, Rebecca E. Bell, Michael B. Underwood, Ake Fagereng, Francesca Meneghini, Heather M. Savage, Hannah S. Rabinowitz, Julia K. Morgan, Hiroko Kitajima, Steffen O. Kutterolf, Yoshitaka Hashimoto, Christie H. Engelmann de Oliveira, Atsushi Noda, Martin P. Crundwell, Claire L. Shepherd, Adam D. Woodhouse, Robert N. Harris, Maomao Wang, Stuart Henrys, Daniel H.N. Barker, Katerina E., Petronotis, Sylvain M. Bourlange, Michael B. Clennell, Ann E. Cook, Brandon E. Dugan, Judith Elger, Patrick M. Fulton, Davide Gamboa, Annika Greve, Shuoshuo Han, Andre Hüpers, Matt J. Ikari, Yoshihiro Ito, Gil Young Kim, Hiroaki Koge, Hikweon Lee, Xuesen Li, Min Luo, Pierre R. Malie, Gregory F. Moore, Joshu J. Mountjoy, David D. McNamara, Matteo Paganoni, Elizabeth J. Sreaton, **Uma Shankar**, Srisharan Shreedharan, Evan A. Solomon, Xiujuan Wang, Hung-Yu Wu, Ingo A. Pecher, Leah J. LeVay, and IODP Expedition 372 Scientists (2020) Slow slip source characterized by lithological and geometric heterogeneity, *Science Advances*, Vol. 6(13), eaay3314, pp. 1–10, doi:10.1126/sciadv.aay3314.

10. **Uma Shankar**, Udhham Singh Yadav, Anand Prakash, and K. Sain (2020) Geothermal study in gas hydrate reservoir dominated by meandering channel system, *Journal of Indian Geophysical Union*, Vol. 24(2), pp 1–9.
11. Yadav U.S., Shukla K.M., Ojha M., Kumar P., **Uma Shankar** (2019) Assessment of gas hydrate accumulations using velocities derived from vertical seismic profiles and acoustic log data in Krishna-Godavari Basin, India, *Marine and Petroleum Geology*, Vol. 108, pp 551–561. doi: 10.1016/j.marpetgeo.2019.02.001.
12. **Uma Shankar** and Pandey A.K., (2019) Estimation of gas hydrate saturation using isotropic and anisotropic modeling in the Mahanadi basin, *Journal of Earth System Science*, Vol. 128 (163), pp 1–10. <https://doi.org/10.1007/s12040-019-1176-8>.
13. **Uma Shankar**, Shikha Srivastava, Dip Kumar Singha and Birendra Pratap (2019) Prediction of pore pressure and fracture pressure from well log data in a gas hydrate reservoir of the Krishna-Godavari basin, *Journal of Indian Geophysical Union*, Vol. 23(5), pp 376–387.
14. Kumar, P., Collett, T.S., Shukla, K.M., Yadav, U.S., Lall, M.V., Vishwanath, K., NGHP-02 Expedition Scientific Party (including **Uma Shankar**) (2019) India National Gas Hydrate Program Expedition-02: Operational and technical summary, *Marine and Petroleum Geology*, Vol. 108, pp 3–38. doi: <https://doi.org/10.1016/j.marpetgeo.2018.11.021>.
15. Shukla K M, Kumar P, Yadav U S and NGHP-02 Science team (including **Uma Shankar**) (2019) Gas hydrate reservoir identification, delineation, and characterization in the Krishna Godavari basin using subsurface geologic and geophysical data from the national gas hydrate program 02 expedition, offshore India, *Marine and Petroleum Geology*, Vol. 108, pp 185–205. doi: 10.1016/j.marpetgeo.2018.10.019.
16. Collett, T.S., Ray Boswel, William F. Waite, Pushpendra Kumar, Sandip Kumar Roy, Krishan Chopra, Sunil Kumar Singh, Yasuhiro Yamada, Norio Tenma, John Pohlman, Margarita Zyrianova and the NGHP Expedition 02 Scientific Party (including **Uma Shankar**) (2019) India National Gas Hydrate Program Expedition 02 Summary of Scientific Results: Gas hydrate systems along the eastern continental margin of India, *Marine and Petroleum Geology*, Vol. 108, pp 39–142. doi: <https://doi.org/10.1016/j.marpetgeo.2019.05.023>.
17. Melissa Gray, Rebecca Bell, Joanna Morgan, Stuart Henrys, Dan Barker and the IODP Expedition 372 and 375 science parties (including **Uma Shankar**) (2019) Imaging the shallow subsurface structure of the north Hikurangi subduction zone, New Zealand, using 2-D full-waveform inversion, *Journal of Geophysical Research - Solid Earth*. DOI: 10.1029/2019JB017793.
18. Fagereng, A., Savage, H. M., Morgan, J. K., Wang, M., Meneghini, F., Barnes, P. M., Bell, R., Kitajima, H., McNamara, D. D., Saffer, D. M., Wallace, L. M., Petronotis, K., LeVay, L., the IODP 372/375 Scientists (including **Uma Shankar**) (2019) Mixed deformation styles observed on a shallow subduction thrust, Hikurangi margin, New Zealand, *Geology*, 47(9), 872–876. <https://doi.org/10.1130/G46367.1>.
19. Saffer, D.M., Wallace, L.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., Bell, R.E., Crundwell, M.P., Engelmann de Oliveira, C.H., Fagereng, A., Fulton, P.M., Greve, A., Harris, R.N., Hashimoto, Y., Hüpers, A., Ikari, M.J., Ito, Y., Kitajima, H., Kutterolf, S., Lee, H., Li, X., Luo, M., Malie, P.R., Meneghini, F., Morgan, J.K., Noda, A., Rabinowitz, H.S., Savage, H.M., Shepherd, C.L., Shreedharan, S., Solomon, E.A., Underwood, M.B., Wang, M., Woodhouse, A.D., Bourlange, S.M., Brunet, M.M.Y., Cardona, S., Clennell, M.B., Cook, A.E., Dugan, B., Elger, J., Gamboa, D., Georgiopoulou, A., Han, S., Heeschen, K.U., Hu, G., Kim, G.Y., Koge, H., Machado, K.S., McNamara, D.D., Moore, G.F., Mountjoy, J.J., Nole, M.A., Owari, S., Paganoni, M., Rose, P.S., Screaton, E.J., **Shankar, U.**, Torres, M.E., Wang, X., and Wu, H.-Y., (2019). Expedition 372B/375 summary. In Wallace, L.M., Saffer, D.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., and the Expedition 372/375 Scientists, *Hikurangi Subduction Margin Coring, Logging, and Observatories*. Proceedings of the International Ocean Discovery Program, 372B/375: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.372B375.101.2019>.
20. Wallace, L.M., Saffer, D.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., Bell, R.E., Crundwell, M.P., Engelmann de Oliveira, C.H., Fagereng, A., Fulton, P.M., Greve, A., Harris, R.N., Hashimoto, Y., Hüpers, A., Ikari, M.J., Ito, Y., Kitajima, H., Kutterolf, S., Lee, H., Li, X., Luo, M., Malie, P.R., Meneghini, F., Morgan, J.K., Noda, A., Rabinowitz, H.S., Savage, H.M., Shepherd, C.L., Shreedharan, S., Solomon, E.A., Underwood, M.B., Wang, M., Woodhouse, A.D., Bourlange, S.M., Brunet, M.M.Y., Cardona, S., Clennell, M.B., Cook, A.E., Dugan, B., Elger, J., Gamboa, D., Georgiopoulou, A., Han, S., Heeschen, K.U., Hu, G., Kim, G.Y., Koge, H., Machado, K.S., McNamara, D.D., Moore, G.F., Mountjoy, J.J., Nole, M.A.,

- Owari, S., Paganoni, M., Rose, P.S., Screaton, E.J., **Shankar, U.**, Torres, M.E., Wang, X., and Wu, H.-Y., (2019). Expedition 372B/375 methods. In Wallace, L.M., Saffer, D.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., and the Expedition 372/375 Scientists, *Hikurangi Subduction Margin Coring, Logging, and Observatories*. Proceedings of the International Ocean Discovery Program, 372B/375: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.372B375.102.2019>.
21. Barnes, P.M., Pecher, I.A., LeVay, L.J., Bourlange, S.M., Brunet, M.M.Y., Cardona, S., Clennell, M.B., Cook, A.E., Crundwell, M.P., Dugan, B., Elger, J., Gamboa, D., Georgiopoulou, A., Greve, A., Han, S., Heeschen, K.U., Hu, G., Kim, G.Y., Kitajima, H., Koge, H., Li, X., Machado, K.S., McNamara, D.D., Moore, G.F., Mountjoy, J.J., Nole, M.A., Owari, S., Paganoni, M., Petronotis, K.E., Rose, P.S., Screaton, E.J., **Shankar, U.**, Shepherd, C.L., Torres, M.E., Underwood, M.B., Wang, X., Woodhouse, A.D., and Wu, H.-Y., 2019. Site U1517. In Pecher, I.A., Barnes, P.M., LeVay, L.J., and the Expedition 372A Scientists, *Creeping Gas Hydrate Slides*. Proceedings of the International Ocean Discovery Program, 372A: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.372A.103.2019>.
 22. Saffer, D.M., Wallace, L.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., Bell, R.E., Crundwell, M.P., Engelmann de Oliveira, C.H., Fagereng, A., Fulton, P.M., Greve, A., Harris, R.N., Hashimoto, Y., Hupers, A., Ikari, M.J., Ito, Y., Kitajima, H., Kutterolf, S., Lee, H., Li, X., Luo, M., Malie, P.R., Meneghini, F., Morgan, J.K., Noda, A., Rabinowitz, H.S., Savage, H.M., Shepherd, C.L., Shreedharan, S., Solomon, E.A., Underwood, M.B., Wang, M., Woodhouse, A.D., Bourlange, S.M., Brunet, M.M.Y., Cardona, S., Clennell, M.B., Cook, A.E., Dugan, B., Elger, J., Gamboa, D., Georgiopoulou, A., Han, S., Heeschen, K.U., Hu, G., Kim, G.Y., Koge, H., Machado, K.S., McNamara, D.D., Moore, G.F., Mountjoy, J.J., Nole, M.A., Owari, S., Paganoni, M., Rose, P.S., Screaton, E.J., **Shankar, U.**, Torres, M.E., Wang, X., and Wu, H.-Y., (2019). Site U1518. In Wallace, L.M., Saffer, D.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., and the Expedition 372/375 Scientists, *Hikurangi Subduction Margin Coring, Logging, and Observatories*. Proceedings of the International Ocean Discovery Program, 372B/375: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.372B375.103.2019>.
 23. Barnes, P.M., Wallace, L.M., Saffer, D.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., Bell, R.E., Crundwell, M.P., Engelmann de Oliveira, C.H., Fagereng, A., Fulton, P.M., Greve, A., Harris, R.N., Hashimoto, Y., Hupers, A., Ikari, M.J., Ito, Y., Kitajima, H., Kutterolf, S., Lee, H., Li, X., Luo, M., Malie, P.R., Meneghini, F., Morgan, J.K., Noda, A., Rabinowitz, H.S., Savage, H.M., Shepherd, C.L., Shreedharan, S., Solomon, E.A., Underwood, M.B., Wang, M., Woodhouse, A.D., Bourlange, S.M., Brunet, M.M.Y., Cardona, S., Clennell, M.B., Cook, A.E., Dugan, B., Elger, J., Gamboa, D., Georgiopoulou, A., Han, S., Heeschen, K.U., Hu, G., Kim, G.Y., Koge, H., Machado, K.S., McNamara, D.D., Moore, G.F., Mountjoy, J.J., Nole, M.A., Owari, S., Paganoni, M., Rose, P.S., Screaton, E.J., **Shankar, U.**, Torres, M.E., Wang, X., and Wu, H.-Y., (2019). Site U1519. In Wallace, L.M., Saffer, D.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., and the Expedition 372/375 Scientists, *Hikurangi Subduction Margin Coring, Logging, and Observatories*. Proceedings of the International Ocean Discovery Program, 372B/375: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.372B375.104.2019>.
 24. Barnes, P.M., Wallace, L.M., Saffer, D.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., Bell, R.E., Crundwell, M.P., Engelmann de Oliveira, C.H., Fagereng, A., Fulton, P.M., Greve, A., Harris, R.N., Hashimoto, Y., Hupers, A., Ikari, M.J., Ito, Y., Kitajima, H., Kutterolf, S., Lee, H., Li, X., Luo, M., Malie, P.R., Meneghini, F., Morgan, J.K., Noda, A., Rabinowitz, H.S., Savage, H.M., Shepherd, C.L., Shreedharan, S., Solomon, E.A., Underwood, M.B., Wang, M., Woodhouse, A.D., Bourlange, S.M., Brunet, M.M.Y., Cardona, S., Clennell, M.B., Cook, A.E., Dugan, B., Elger, J., Gamboa, D., Georgiopoulou, A., Han, S., Heeschen, K.U., Hu, G., Kim, G.Y., Koge, H., Machado, K.S., McNamara, D.D., Moore, G.F., Mountjoy, J.J., Nole, M.A., Owari, S., Paganoni, M., Rose, P.S., Screaton, E.J., **Shankar, U.**, Torres, M.E., Wang, X., and Wu, H.-Y., (2019). Site U1520. In Wallace, L.M., Saffer, D.M., Barnes, P.M., Pecher, I.A., Petronotis, K.E., LeVay, L.J., and the Expedition 372/375 Scientists, *Hikurangi Subduction Margin Coring, Logging, and Observatories*. Proceedings of the International Ocean Discovery Program, 372B/375: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.372B375.105.2019>.
 25. Wallace, L.M., Saffer, D.M., Petronotis, K.E., Barnes, P.M., Bell, R.E., Crundwell, M.P., Engelmann de Oliveira, C.H., Fagereng, A., Fulton, P.M., Greve, A., Harris, R.N., Hashimoto, Y., Hupers, A., Ikari, M.J., Ito, Y., Kitajima, H., Kutterolf, S., Lee, H., Li, X., Luo, M., Malie, P.R., Meneghini, F., Morgan, J.K., Noda, A., Rabinowitz, H.S., Savage, H.M., Shepherd, C.L., Shreedharan, S., Solomon, E.A., Underwood, M.B., Wang, M., and Woodhouse, A.D., (2019). Site U1526. In Wallace, L.M., Saffer, D.M., Barnes, P.M., Pecher,

- I.A., Petronotis, K.E., LeVay, L.J., and the Expedition 372/375 Scientists (including **Uma Shankar**), *Hikurangi Subduction Margin Coring, Logging, and Observatories*. Proceedings of the International Ocean Discovery Program, 372B/375: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.372B375.106.2019>.
26. Pecher I A., Barnes P M., LeVay L J. and the Expedition 372 Scientist (including **Uma Shankar**) (2018), Expedition 372 Preliminary Report: Creeping Gas Hydrate Slides and Hikurangi LWD. International Ocean Discovery Program (IODP). <https://doi.org/10.14379/iodp.pr.372.2018>. ISSN-2372-9562.
 27. Sandeep Rana, Ajeet Kumar, Dhananjai Kumar Pandey, **Uma Shankar** (2018) Structural and stratigraphic interpretation in Indian Ocean Geoid low: A multichannel seismic data. *Journal of Geophysics*, Vol. 39(2), pp 57–72.
 28. **Uma Shankar**, Debjani Bhowmick, Kalachand Sain (2016) Estimation of gas hydrate saturation using model based acoustic impedance inversion from Mahanadi Basin. *Journal of Indian Geophysical Union*, Vol. 20(3), pp 309–315.
 29. **Uma Shankar** (2016) Gas hydrate saturation from seismic data constrained by log data in the Krishna-Godavari Basin, *Journal of Petroleum Exploration and Production Technology*, Vol. 6, pp 13–23. doi :10.1007/s13202-015-0170-1.
 30. **Uma Shankar** and Michael Riedel (2014) Assessment of gas hydrate saturation in marine sediments from resistivity and P-wave velocity log measurements in the Mahanadi Basin, India, *Marine and Petroleum Geology*, Vol. 58, pp 265–277. doi: 10.1016/j.marpetgeo.2013.10.007.
 31. **Uma Shankar**, Kalachand Sain and Michael Riedel (2014) Assessment of gas hydrate stability zone and geothermal modeling of BSR in the Andaman Sea, *Journal of Asian Earth Sciences*, Vol. 79, pp 358–365. doi: 10.1016/j.jseaes.2013.10.021.
 32. **Uma Shankar**, Deepak K. Gupta, Debjani Bhowmick and Kalachand Sain (2013) Gas Hydrate and Free Gas Saturations using rock physics modeling at site NGHP-01-05 and 07 in the Krishna-Godavari Basin, Eastern Indian margin, *Journal of Petroleum Science and Engineering*, Vol. 106, pp 62–70. doi:10.1016/j.petrol.2013.04.004.
 33. **Uma Shankar** and Michael Riedel (2013) Heat flow and gas hydrate saturation estimates from Andaman Sea, India, *Marine and Petroleum Geology*, Vol. 43, pp 434–449. doi:10.1016/j.marpetgeo.2012.12.004.
 34. Deepak K. Gupta, Jai. P. Gupta, Yogesh Arora and **Uma Shankar** (2013) Recursive Ant Colony Optimization: A new Technique for Estimation of Function Parameters from Geophysical Field Data, *Near Surface Geophysics*, Vol. 11, pp 325–339. doi:10.3997/1873-0604.2012062.
 35. Pasupuleti Prasada Rao, Sanjeev Rajput, Bhaskarbhata Ashalatha, **Uma Shankar**, Kalachand Sain, Maradani Simhadri Naidu, Vuyyuru Triveni and Naresh Kumar Thakur (2012) Lithospheric Structure Model of Central Indian Ocean Basin Using Ocean Bottom Seismometer Data, *Journal of Earth Science and Engineering*, Vol. 2 (6), pp 344–359.
 36. **Uma Shankar** and Kalachand Sain (2012) Amplitude variation with offset responses for gas hydrate/free gas models: a case study, *Current Science*, Vol. 103 (4), pp 413–419.
 37. Michael Riedel and **Uma Shankar** (2012) Combining impedance inversion and seismic similarity for robust gas hydrate concentration assessments - A case study from the Krishna-Godavari Basin, East Coast of India, *Marine and Petroleum Geology*, Vol. 36, pp 35–49.
 38. **Uma Shankar**, Kalachand Sain and Michael Riedel (2012) Geothermal modeling for the base of gas hydrate stability zone and saturation of gas hydrate in the Krishna-Godavari Basin, eastern Indian margin, *Journal of Geological Society of India*, Vol. 79, pp 199–209.
 39. **Uma Shankar** and Michael Riedel (2011) Gas hydrate saturation in the Krishna-Godavari basin from P-wave velocity and electrical resistivity logs, *Marine and Petroleum Geology*, Vol. 28, pp 1768–1778.
 40. Michael Riedel, Tim S. Collett and **Uma Shankar** (2011) Documenting channel features associated with gas hydrates in the Krishna-Godavari Basin, offshore India, *Marine Geology*, Vol. 279, pp 1–11.
 41. **Uma Shankar** and Michael Riedel (2010) Seismic and heat flow constraints from the gas hydrate system in the Krishna-Godavari basin, India, *Marine Geology*, Vol. 276, pp 1–13.
 42. **Uma Shankar**, Michael Riedel and A.V. Sathe (2010) Geothermal modeling of the gas hydrate stability zone along the Krishna Godavari Basin. *Marine Geophysical Researches*, Vol. 31, pp 17–28.
 43. **Uma Shankar**, Shashank Shekhar Singh and Kalachand Sain (2009), Signal enhancement and multiple suppression using Radon transform: an application to marine multi-channel seismic data, *Marine Geophysical Research*, Vol. 30, pp 85–93.

44. **Uma Shankar** and Kalachand Sain (2009), Heat flow variation from bottom simulating reflector in the Kerala-Konkan basin of the western continental margin of India, *Indian Journal of Marine Sciences*, Vol. 38(1), pp 110–115.
45. Chauhan, A. P. S., S. C. Singh, N. D. Hananto, H. Carton, F. Klingelhoefer, J.-X. Dessa, H. Permana, N. J. White, D. Graindorge, and Sumatra OBS Scientific Team (**including Uma Shankar**) (2009) Seismic imaging of forearc backthrusts at northern Sumatra subduction zone, *Geophysical Journal International*, Vol. 179, pp 1772–1780.
46. D. Graindorge, F. Klingelhoefer, Jean-Claude Sibuet, Lisa Mc-Neill, T. J. Henstock, Simon Dean, Marc-Andre Gutscher, Jean Xavier Dessa, H. Permana, S. C. Singh, H. Leau, N. White, H. Carton, J. A. Malod, Claude Rangin, Ketut G. Aryawan, A. K. Chaubey, A. Chauhan, D. R. Galih, C. J. Greenroyd, Agus Laesanpura, Joko Prihantono, G. Royle and **Uma Shankar** (2008) Impact of the lower plate on upper plate deformation at the NW Sumatran convergent margin from seafloor morphology, *Earth and Planetary Science Letters*, Vol. 275, pp 201–210.
47. **Uma Shankar**, Maheswar Ojha, Kalachand Sain, Ramesh Khanna, M. Sudhakar and Abhishek Tyagi (2008) Seafloor geophysical study in search of gas hydrates/gas related evidences in the deep waters of the western continental margin of India, *Journal of Geological Society of India*, Vol. 72, No. 4, pp 547–555.
48. **Uma Shankar** and Kalachand Sain (2007) Specific character of the bottom simulating reflectors near mud diapirs: Western margin of India, *Current Science*, Vol. 93, No. 7, pp 997–1002.
49. Sumatra Andaman Great Earthquake Research (**SAGER**) –**OBS team** on board French research vessel R/V Marion Dufresne (2006) Seismic investigation of the Great Sumatra-Andaman earthquake, *First Break*, Vol. 24, pp 37–40.
50. **Uma Shankar**, N. K. Thakur and B. Ashalatha (2006) Fluid flow related features as an Indicator of potential gas hydrate zone: western continental margin of India, *Marine Geophysical Research*, Vol. 27, pp 217–224.
51. A. R. Sridhar, A. Pradeep Kumar, **Uma Shankar** and N. K. Thakur (2006) Presence of Illites in Bay of Bengal- An analysis of the sample obtained from GEODROME, *Current Science* Vol. 90, No. 4, pp 574–578.
52. **Uma Shankar**, Babita Sinha, N. K. Thakur and Ramesh Khanna (2005) Amplitude versus offset modeling of the bottom simulating reflection associated with submarine gas hydrates, *Marine Geophysical Research*, Vol. 26, pp 29–35.
53. **Uma Shankar**, N. Satyavani, Babita Sinha and N. K. Thakur (2004) Seismic reflection data: its utility in estimation of gas hydrate in deep marine sediments by published, *Current Science*, Vol. 87, No. 4, pp 515–520.
54. **Uma Shankar**, N. K. Thakur and S. I. Reddi (2004) Estimate of geothermal gradient and heat flow from BSR along the Kerala-konkan basin of WCMI, *Current Science*, Vol. 87, No. 2, pp 250–253.
55. N. Satyavani, N. K. Thakur, **Uma Shankar**, S. I. Reddi, A.R. Sridhar, P. Prasad Rao, K. Sain and Ramesh Khanna (2003) Indicator of gas hydrates: Role of VAMP'S by published, *Current Science*, Vol. 85, No. 9, pp 1360–1363.
56. **Uma Shankar**, N. K. Thakur and Ramesh Khanna (2003) Gravity signatures of gas hydrate, *Current Science*, Vol. 85, No. 4, pp 474–477.
57. N. Satyavani, **Uma Shankar**, N. K. Thakur and S. I. Reddi (2002) Possible gas hydrate / free gas model over western continental margin of India, *Marine Geophysical Research*, Vol. 23, pp 423–430.

PAPERS PUBLISHED IN NON-SCI JOURNALS

- Dip Kumar Singha, Neha Rai, Madhvi, Mangal Maurya, **Uma Shankar** and Rima Chatterjee (2021) Interpretation of Self-Potential (SP) Log and Depositional Environment in the Upper Assam Basin, India. A book chapter in Arkoprovo Biswas edited book “Self-Potential Method: Theoretical Modeling and Applications in Geosciences”, Springer publication, pp 279–301.
- Debjani Bhowmick, Deepak K. Gupta, S. Maiti and **Uma Shankar** (2018) Deep auto-associative neural networks for noise reduction in seismic data, 80th EAGE Annual Conference & Exhibition.
- Debjani Bhowmick, Deepak K. Gupta, S. Maiti and **Uma Shankar** (2018) Velocity-porosity supermodel: a deep neural networks based concept, 80th EAGE Annual Conference & Exhibition.

- **Uma Shankar** (2017) Comparison of gas hydrate saturation estimated from isotropic and anisotropic modeling in the Mahanadi basin, 12th Biennial International Conference and Exposition, SPG, Jaipur, 17-19 November.
- **Uma Shankar** and Kalachand Sain (2015) Seismic attributes for characterization of gas hydrate and free gas in the Mahanadi Basin, SPG, Jaipur, 3-6 December, 2015.
- **Uma Shankar**, Michael Riedel, Anne M. Trehu (2014) Gas hydrate characterization and saturation from logs and seismic data in the Mahanadi Basin, 9th *International Methane Hydrate Research and Development Workshop* (Fiery Ice), HICC Hyderabad, India.
- **Uma Shankar**, Anne M. Trehu, Robert N. Harris (2014) Effect of topography on estimates of the geothermal gradient derived from BSR and drilling estimates in the Krishna Godavari and Andaman forearc Basins, 9th *International Methane Hydrate Research and Development Workshop* (Fiery Ice), HICC Hyderabad, India.
- Debjani Bhowmick, Deepak K. Gupta, A. Malhotra and **Uma Shankar** (2014) A new tool for estimation of gas hydrate saturation, 76th *EAGE conference and exhibition*, Netherland. DOI: 10.3997/2214-4609.20140863.
- **Uma Shankar**, Michael Riedel and Kalachand Sain (2012) Estimated heat flow and gas hydrate saturation from resistivity and P-wave velocity logs in the Andaman Sea, India, 8th *International workshop on methane hydrate research and development (Fiery Ice)*, 28th May to 1st June at ROYTON Sapporo, Hokkaido, Japan.
- Deepak K. Gupta, Debjani Bhowmick, **Uma Shankar** and Kalachand Sain (2012) Transformation from Acoustic to Reservoir Properties Based on Ant Colony Model and Effective Medium Theory, *SEG Las Vegas 2012 Annual Meeting*. Document ID: SEG-2012-1529.
- Debjani Bhowmick, Deepak K. Gupta, **Uma Shankar** and Kalachand Sain (2012) A Transformation from Acoustic and Density Properties to Reservoir Properties applied to Krishna Godavari Basin, India, 75th *EAGE Saint Petersburg International Conference & Exhibition –Geosciences: Making the most of the Earth's resources*, Saint Petersburg, Russia, 2-5 April. DOI: 10.3997/2214-4609.20143683.
- **Uma Shankar**, Michael Riedel and Kalachand Sain (2012) Gas hydrate stability zone modeling in the Krishna Godavari Basin, Eastern margin of India, 9th SPG Conference and exhibition on Petroleum Geophysics at Hyderabad International Convention Center (HICC), 16-18 February.
- Debjani Bhowmick, Deepak K. Gupta, **Uma Shankar** and Kalachand Sain (2012) A Transformation from Acoustic and Density Properties to Reservoir Properties applied to Krishna Godavari Basin, India, 9th *SPG Conference and exhibition on Petroleum Geophysics* at Hyderabad International Convention Center (HICC), 16-18 February
- **Uma Shankar**, Michael Riedel and Kalachand Sain (2011) Assessment of heat flow and gas-hydrate in Krishna Godavari basin constrained from 2D/3D seismic and well log data, *International conference on gas hydrates (ICGH)*, Edinburgh, UK, *Paper ID 201100451*.
- **Uma Shankar**, Michael Riedel, A. V. Sathe (2010) Heat flow inferred from base of gas hydrate stability field on the continental margin of India, *PETROTECH-2010 International conference, New Delhi, India, Paper ID 20100190*.
- **Uma Shankar**, Kalachand Sain, Ramesh Khanna (2009) AVO responses for gas hydrate reflectors using ray path elastic impedance, *PETROTECH-2009 International conference, New Delhi, India, Paper ID P09-866*.
- Shashank Shekhar Singh, **Uma Shankar**, Kalachand Sain (2008) Multiple Suppression and Data Quality Enhancement Using Radon Transform: A Case Study, 7th *SPG International Conference & Exposition on Petroleum Geophysics, Hyderabad-2006, India, Paper ID 268*.
- Sarvind Ram, **Uma Shankar**, Kalachand Sain, N. K. Thakur (2008) Saturation Estimation of Gas Hydrates with Relevant Velocity Models, 7th *SPG International Conference & Exposition on Petroleum Geophysics, Hyderabad-2006, India, Paper ID 125*.
- **Uma Shankar**, Maheswar Ojha, Kalachand Sain, Ramesh Khanna, M. Sudhakar, Abhishek Tyagi (2008) Utility of Seafloor Geophysical Study in Search of Gas Hydrates / Gas Related Evidences in The Deep Waters of the Western India Margin, 7th *SPG International Conference & Exposition on Petroleum Geophysics, Hyderabad-2006, India, Paper ID 227*.
- **Uma Shankar** and Kalachand Sain (2007) Possible evidences for the presence of gas hydrates without distinctive BSR on the western continental margin of India based on the conventional multichannel seismic data, National seminar on Modern Trends in Geophysical Science and Techniques, organized by Department of Applied Geophysics Indian School of Mines University, Dhanbad, India, Nov. 12-14, PP 167-170.
- **Uma Shankar** and Kalachand Sain (2007) Marker for possible gas-hydrates and gas in the shallow sediments of the western Indian margin, *PETROTECH-2007 International conference, New Delhi, India, Paper ID 670*.

- **Uma Shankar**, N. K. Thakur, Ramesh Khanna (2006) A Simple Approximation to the P-wave Reflection Coefficient and its Implication in the Amplitude Variation with Offset (AVO) Data for Gas Hydrate Identification, *6th SPG Conference & Exposition on Petroleum Geophysics, Kolkata-2006, India, PP 840-843.*
- N. Satyavani, **Uma Shankar**, B. Ashalatha, S. I. Reddi, N. K. Thakur (2004) A Preliminary Study of Hydrate and Free Gas Saturation in a Gas Hydrate reserve, *5th SPG Conference & Exposition on Petroleum Geophysics, Hyderabad-2004, India, PP 921-922.*
- **Uma Shankar**, Babita Sinha, N. Satyavani, B. Ashalatha, S.I. Reddi, N.K. Thakur (2004) Amplitude Versus Offset Modeling of the Bottom Simulating Reflection Associated with Submarine Gas Hydrates, *5th SPG Conference & Exposition on Petroleum Geophysics, Hyderabad-2004, India, PP 539-540.*

PAPERS PRESENTED IN NATIONAL/INTERNATIONAL CONFERENCES

1. Sangeeta Kumari and **Uma Shankar** (2022) Analysis of Shear wave velocity structures of Varanasi city, Uttar Pradesh using microtremor array measurements, 3rd Triennial Congress of FIGA, 59th Annual Convention of IGU on Geosciences of Himalaya for Sustainable Development at WIHG, Dehradun from November 16-18.
2. Udham Singh Yadav¹, M V Lall, Shukla K M, A Prakash, **Uma Shankar**, J Nanda, S K Dewri (2022) Implication of sedimentation rate and geological structures on gas hydrate distribution and saturation in marine sediment: A case study from KG Basin, GEO India conference.
3. **Uma Shankar** (2017) Comparison of gas hydrate saturation estimated from isotropic and anisotropic modeling in the Mahanadi basin, 12th Biennial International Conference and Exposition, SPG, Jaipur, 17-19 November.
4. **Uma Shankar** (2017) Appraisal of gas hydrates from seismic and log data in the continental margins of India, 39th annual convention, seminar and exhibition of AEG on Near Surface Resource Exploration at Department of Geophysics, Institute of Science, Banaras Hindu University, Varanasi during 5-7 October.
5. Sandeep Rana, Ajeet Kumar, Dhananjai Kumar Pandey, **Uma Shankar** (2017) Interpretation of seismic data from Geoid Low region in Indian Ocean, 39th annual convention, seminar and exhibition of AEG on Near Surface Resource Exploration at Department of Geophysics, Institute of Science, Banaras Hindu University, Varanasi during 5-7 October.
6. Archita Pandey, Abhay Ram Bansal, **Uma Shankar** (2017) Estimation of Moho depth using gravity data from Brittany France, 39th annual convention, seminar and exhibition of AEG on Near Surface Resource Exploration at Department of Geophysics, Institute of Science, Banaras Hindu University, Varanasi during 5-7 October.
7. Divya Mishra, M Sekhar, **Uma Shankar** (2017) An understanding of groundwater system using water table fluctuation method, 39th annual convention, seminar and exhibition of AEG on Near Surface Resource Exploration at Department of Geophysics, Institute of Science, Banaras Hindu University, Varanasi during 5-7 October.
8. Shubham Shukla, Subash Chandra, **Uma Shankar** (2017) Detecting water potential zones in hard rock area using VES and ERT, 39th annual convention, seminar and exhibition of AEG on Near Surface Resource Exploration at Department of Geophysics, Institute of Science, Banaras Hindu University, Varanasi during 5-7 October.
9. **Uma Shankar** (2016) Exploration and assessment of gas hydrates in Indian continental margins, 1st Triennial Congress of FIGA, 53rd Annual Convention of IGU and 34th Annual Convention of AHI on Geosciences for Sustainability at IIT (ISM) Dhanbad from November 8-10.
10. **Uma Shankar** (2016) Assessment of gas hydrate in the Mahanadi basin from seismic and log data, 1st Triennial Congress of FIGA, 53rd Annual Convention of IGU and 34th Annual Convention of AHI on Geosciences for Sustainability at IIT (ISM) Dhanbad from November 8-10.
11. Sachin Kumar, M. Ojha, **Uma Shankar** (2016) Identification of free gas below BSR from AVA analysis in the Krishna Godavari offshore basin, 1st Triennial Congress of FIGA, 53rd Annual Convention of IGU and 34th Annual Convention of AHI on Geosciences for Sustainability at IIT (ISM) Dhanbad from November 8-10.

12. Keshav Kumar, M. Ojha, **Uma Shankar**, K. Sain (2016) Gas hydrate saturation from well log data in the Krishna Godavari Basin, 1st Triennial Congress of FIGA, 53rd Annual Convention of IGU and 34th Annual Convention of AHI on Geosciences for Sustainability at IIT (ISM) Dhanbad from November 8-10.
13. Prabhakar Singh, K. Vijay Kumar, Gautam Param, P. S. Sunil, G. S. Yadav, **Uma Shankar** (2016) Comparative study of total electron content from GPS data at two terrains: plain and hill, 1st Triennial Congress of FIGA, 53rd Annual Convention of IGU and 34th Annual Convention of AHI on Geosciences for Sustainability at IIT (ISM) Dhanbad from November 8-10.
14. **Uma Shankar** and Kalachand Sain (2015) Seismic attributes for characterization of gas hydrate and free gas in the Mahanadi Basin, 12th Biennial International Conference and Exposition, SPG, Jaipur, 3-6 December, 2015.
15. **Uma Shankar** and Kalachand Sain (2015) Seismic mapping of gas hydrate deposits in Andaman Sea, 52nd Annual Convention of IGU, 3-5 November, NCAOR, Goa.
16. Kalachand Sain, M. Ojha, **Uma Shankar**, N. Satyavani and V. Jyothi (2015) Identification, delineation and quantification of gas-hydrates in Krishna-Godavari offshore basin, eastern Indian margin, AOGS 12th annual meeting, 2-7 August, Singapore.
17. **Uma Shankar** and Kalachand Sain (2014) Gas hydrates saturation from seismic and log data in the Mahanadi Basin, 51st Annual Convention of IGU, 19-21 November, Kurukshetra University, Haryana.
18. **Uma Shankar**, Michael Riedel, Anne M. Trehu (2014) Gas hydrate characterization and saturation from logs and seismic data in the Mahanadi Basin, 9th International Methane Hydrate Research and Development Workshop (Fiery Ice), 9-12 November, HICC Hyderabad, India.
19. **Uma Shankar**, Anne M. Trehu, Robert N. Harris (2014) Effect of topography on estimates of the geothermal gradient derived from BSR and drilling estimates in the Krishna Godavari and Andaman forearc Basins, 9th International Methane Hydrate Research and Development Workshop (Fiery Ice), 9-12 November, HICC Hyderabad, India.
20. Debjani Bhowmick, Deepak K. Gupta, A. Malhotra and **Uma Shankar** (2014) A new tool for estimation of gas hydrate saturation, 76th EAGE conference and exhibition, Netherlands.
21. Ankur Mundhra, Kalachand Sain, **Uma Shankar** (2012) Estimation of gas hydrate saturation using isotropic and anisotropic models at the location selected after measurement of seismic quality factor, AGU Fall Meeting, San Francisco, 3-7 December 2012.
22. Deepak K. Gupta, Debjani Bhowmick, **Uma Shankar** and Kalachand Sain (2012) Transformation from Acoustic to Reservoir Properties Based on Ant Colony Model and Effective Medium Theory, SEG Las Vegas 2012 Annual Meeting.
23. **Uma Shankar**, Michael Riedel and Kalachand Sain (2012) Estimated heat flow and gas hydrate saturation from resistivity and P-wave velocity logs in the Andaman Sea, India, presented in 8th International workshop on methane hydrate research and development (Fiery Ice from the Seas), 28th May-1st June, 2012 at ROYTON, Sapporo, Hokkaido, Japan.
24. Debjani Bhowmick, Deepak K. Gupta, **Uma Shankar** and Kalachand Sain (2012) A Transformation from Acoustic and Density Properties to Reservoir Properties applied to Krishna Godavari Basin, India, 5th EAGE Saint Petersburg International Conference & Exhibition –Geosciences: Making the most of the Earth's resources, Saint Petersburg, Russia, 2-5 April.
25. **Uma Shankar**, Michael Riedel and Kalachand Sain (2012) Gas hydrate stability zone modeling in the Krishna Godavari Basin, Eastern margin of India, presented in 9th SPG Conference and exhibition on Petroleum Geophysics, 16-18 February at Hyderabad International Convention Center (HICC).
26. Debjani Bhowmick, Deepak K. Gupta, **Uma Shankar** and Kalachand Sain (2012) A Transformation from Acoustic and Density Properties to Reservoir Properties applied to Krishna Godavari Basin, India, 9th SPG Conference and exhibition on Petroleum Geophysics at Hyderabad International Convention Center (HICC), 16-18 February.
27. **Uma Shankar**, Kalachand Sain and Michael Riedel (2011) Mapping of gas hydrate stability zone and geothermal modeling for the base of gas hydrate stability zone in the Krishna-Godavari Basin, presented in 7th International conference on Asian Marine Geology (ICAMG), 10th to 14th October at NIO, Goa.
28. **Uma Shankar**, Michael Riedel and Kalachand Sain (2011) Assessment of heat flow and gas-hydrate in Krishna Godavari basin constrained from 2D/3D seismic and well log data, presented in 7th International conference on gas hydrates (ICGH), 17th July – 22nd July at Edinburgh, UK.

29. **Uma Shankar**, Michael Riedel and A. V. Sathe (2010) Heat flow inferred from base of gas hydrate stability field on the continental margin of India, presented in PETROTECH-2010, 9th international oil and gas conference and exhibition, 31st October -03rd November at New Delhi, India.
30. **Uma Shankar** and Michael Riedel (2010) Assessment of Heat flow and Gas-hydrate in KG Basin, Constrained from 2D/3D Seismic and Well Log Data, presented in INDO-US workshop, 4th to 5th October at NIOT Chennai, India.
31. **Uma Shankar** and Michael Riedel (2010) 2D Topographic Modeling on Heat Flow Inferred from the Base of the Gas Hydrate Stability Zone in the Krishna Godavari Basin, presented in AOGS international conference, 5th to 9th July at Hyderabad, India.
32. **Uma Shankar** and Michael Riedel (2010) Gas Hydrate Concentration Estimates in the Krishna-Godavari Basin from Electrical Resistivity and P-wave Velocity Logs, India NGHP Expedition-01, presented in AOGS international conference, 5th to 9th July at Hyderabad, India.
33. **Uma Shankar**, Shashank Shekhar Singh and Kalachand Sain (2009) Radon-based multiple-removal filters: An application to marine multichannel seismic data, presented in national seminar on Challenge in Geophysics in 21st century, 27th February-1st March at Center of Exploration Geophysics, Osmania University, Hyderabad.
34. **Uma Shankar**, Kalachand Sain and Ramesh Khanna (2009) AVO response for gas hydrate reflectors using ray path elastic impedance, presented in PETROTECH-2009, 8th international oil and gas conference and exhibition, 11-15th January at New Delhi, India.
35. **Uma Shankar**, Kalachand Sain and Ramesh Khanna (2008) Amplitude variation with offset and its implication in the gas hydrate / free gas modeling, 45th Annual Convention of, Indian Geophysical Union (IGU) and meeting on “Seismic Hazard and Crustal Earthquakes: Indian Scenario” at Banaras Hindu University, Varanasi.
36. **Uma Shankar**, Shashank Sekhar Singh and Kalachand Sain (2008) Signal enhancement and multiple suppression using radon transform – an application to gas-hydrate reflector, presented in international conference on Gas Hydrates (under the Aegis of the NGHP) organized by DGH from 6th to 8th February.
37. Shashank Shekhar Singh, **Uma Shankar** and Kalachand Sain (2008) Multiple suppression and data quality enhancement using radon transform: A case study, presented in SPG-2008, 7th international conference and exposition on “Energy Security-Exploration, Exposition and Economics” 14-16 January at HICC, Hyderabad.
38. Sarvind Ram, **Uma Shankar**, Kalachand Sain & N. K. Thakur (2008) Saturation estimation of gas hydrates with relevant velocity models, presented in SPG-2008, 7th international conference and exposition on “Energy Security-Exploration, Exposition and Economics” 14-16 January at HICC, Hyderabad.
39. **Uma Shankar**, Maheswar Ojha, Kalachand Sain, Ramesh Khanna, M. Sudhakar and Abhishek Tyagi (2008) Utility of seafloor geophysical study in search of Gas hydrates / gas related evidences in the deep waters of the western India margin, presented in SPG-2008, 7th international conference and exposition on “Energy Security-Exploration, Exposition and Economics” 14-16 January at HICC, Hyderabad.
40. **Uma Shankar** and Kalachand Sain (2007) Possible evidences for the presence of gas hydrates without distinctive BSR on the Western Continental Margin of India based on the conventional multi-channel seismic data, presented in national seminar MTGST-2007, 12-14 November at Indian School Mines University, Dhanbad.
41. **Uma Shankar** and Kalachand Sain (2007) Geophysical proxies for possible gas-hydrates in the Indian offshore area, presented in national seminar on Mapping and Monitoring of Deep Crustal Features using Geoelectromagnetics and other Geophysical Methods, 12-13 March at Indian School Mines University, Dhanbad.
42. **Uma Shankar** and Kalachand Sain (2007) Evidences for the presence of gas hydrates on the western continental margin of India based on the fluid flow related features, presented in national seminar and workshop on Hydrocarbon Exploration Technology-Challenge and Opportunities, 26-28th February at Center of Exploration Geophysics, Osmania University, Hyderabad.
43. **Uma Shankar**, Kalachand Sain and N. K. Thakur (2007) Geophysical and geological signatures of gas hydrate presence along western margin of India, presented in national seminar on gas-hydrates-a potential source of energy, 4 -5th January at NIOT, Chennai.
44. **Uma Shankar**, Kalachand Sain and N. K. Thakur (2007) Marker for possible gas-hydrates and gas in the shallow sediments of the western Indian margin, presented in PETROTECH-2007, 7th international conference and exhibition on oil and gas, 15-19th January at New Delhi, India.

45. Ajay Chauhan, Satish C Singh, Nugroho Carton, H, Hananto, F Klingelhoefer, J.-X Dessa, H Permana, D Graindorge, S Dean, N White, AK Chaubey, **Uma Shankar**, DR Galih, G Royle, KG Aryawan, A Laesanpura, J Prihantono (2007) Wide angle seismic refraction imaging of the Northern Sumatra Subduction Zone, American Geophysical Union (AGU) Conference, Bibliographic Code: 2007AGUUFM.S31C0558C.
46. F Klingelhoefer, J-X Dessa, H Permana, D Graindorge, S Dean, N White, S Singh, O Aouji, KG Aryawan, J Begot, L Beguery, A Burchell, AK Chaubey, J Crozon, R Daniel, P Fernague, DR Galih, CJ Greenroyd, A Laesanpura, P Pelleau, J Prihantono, G Royle, **Uma Shankar** (2006) First Results From the SAGER-OBS Deep Seismic Cruise (July/August 2006) Offshore Sumatra, American Geophysical Union (AGU) Conference, Bibliographic Code: 2006AGUUFM.U52A.05K.
47. D Graindorge, F Klingelhoefer, JC Sibuet, H Permana, JX Dessa, S Singh, S Dean, N White, H Carton, A Chauhan, C Greenroyd, KG Aryawan, AK Chaubey, DR Galih, A Laesanpura, J Prihantono, G Royle, **Uma Shankar**, L McNeill, T Henstock (2006) Detailed seafloor morphology in the epicentral region of the Great Sumatra-Andaman earthquake from the compilation of 2005-2006 French and British swath bathymetric data, American Geophysical Union (AGU) Conference, Bibliographic Code: 2006AGUUFM.U53C.05G.
48. **Uma Shankar**, N. K. Thakur and Ramesh Khanna (2006) A simple approximation to the P-wave reflection coefficient and its implication in the amplitude variation with offset (AVO) data for gas hydrate identification, presented in SPG-2006, 6th International Conference and Exposition on Petroleum Geophysics on “Geophysics for Mitigating Exploration Risks” 9-11 January at Science City, Kolkata, India.
49. **Uma Shankar**, A. R. Sridhar, N. K. Thakur, Yury Zubko, Alexander Nossov, Serguli Dremoutchev, Vladimir Yuritsin and Vladimir Kouzuetsov (2004) Indo-Russian Collaboration to study the Earth Structure and Dynamics in the Bay of Bengal using GEODROME, presented in 41st Annual Convention of Indian Geophysical Union (IGU) and meeting on “Inter and Intraplate Seismicity in India – Present knowledge and Future Strategy” at National Geophysical Research Institute, Hyderabad.
50. **Uma Shankar**, Kalachand Sain and N. K. Thakur (2004) Proxies for gas-hydrates in Western Indian Margin, presented in 41st Annual Convention of, Indian Geophysical Union (IGU) and meeting on “Inter and Intraplate Seismicity in India – Present knowledge and Future Strategy” at National Geophysical Research Institute, Hyderabad.
51. **Uma Shankar**, N. K. Thakur and P. Prasad. Rao (2004) Seismic velocity structure at the gas hydrate reflector - western continental margin of India, presented in first AOGS 1st Annual meeting and second APHW conference at Singapore.
52. **Uma Shankar**, N. Satyavani, Babita Sinha and N.K. Thakur (2004) AVO study of bottom simulating reflection in parallel bedding of Western continental margin of India, presented in National Symposium on “Application of Marine Geosciences” at National Institute of Oceanography, Goa, India.
53. N. Satyavani, **Uma Shankar**, N.K. Thakur and S.I. Reddi (2004) A preliminary study of gas hydrates and free gas saturation in a gas hydrate reserve, presented in SPG-2004, 5th International Conference and Exposition on Petroleum Geophysics on “Geophysics: Leveraging Technologies for E & P Business” at Taj Krishna, Hyderabad, India.
54. **Uma Shankar**, N. Satyavani, Babita Sinha, B. Ashalata, N.K. Thakur and S.I. Reddi (2004) Amplitude versus offset modelining of the bottom simulating reflection associated with submarine gas hydrates, presented in 5th International Conference and Exposition on Petroleum Geophysics on “Geophysics: Leveraging Technologies for E & P Business” at Taj Krishna, Hyderabad, India.
55. **Uma Shankar**, N.K. Thakur and Ramesh Khanna (2003) 2-D Gravity signatures of gas hydrate, presented in golden jubilee celebrations and national symposium on “*developments in geophysical sciences in India*”, held at Banaras Hindu University (BHU), Varanasi.
56. S.I. Reddi, N.K. Thakur, Ramesh Khanna, Kalachand Sain, A.R. Sridhar, P. Prasada Rao, **Uma Shankar**, A. Rastogi, and Gautham Biswas (2003) Gas Hydrate Studies in Kerala-Konkan Offshore Region of India, presented in AAPG Conference, Salt Lake City, Utah.
57. **Uma Shankar**, N. Satyavani, N.K. Thakur and S.I. Reddi (2003) Possible presence of gas hydrates/free gas over western continental margins of India: modeling for quantification, presented in silver jubilee workshop on “exploration and evaluation of costal and offshore resources” (minerals and energy), held at Mangalore University.

INVITED TALK

- ❖ “Gas hydrates exploration and assessment using multidisciplinary approach from seismic and downhole log data” 26th International conference of International academy of physical sciences on Advances in Applied Physics & Earth Sciences held online by Department of Physics, School of Basic Sciences, Manipal University, Jaipur during December 18-20, 2020.
- ❖ “Gas hydrates: The Indian Scenario”, Geological Survey of Canada, Pacific Geoscience Center, Sidney, British Columbia, Canada, June 30, 2009.
- ❖ “Multidisciplinary approach for gas hydrate exploration and estimation of gas hydrates in the continental margins of India”, SPE/SEG/EAGE/Petrotech/SPG Joint Workshop on Gas Hydrates, Pandit Deendayal Petroleum University, Gandhinagar, India, March 24, 2012.
- ❖ “Exploration and Assessment of gas hydrates in continental margins of India”, Oregon State University, Corvallis, OR 97331-5503, OR, USA, November 8, 2013.

TEACHING EXPERIENCE

M. Sc. (Tech) exploration geophysics teaching experience from February 2016 at Department of Geophysics, Institute of Science, Banaras Hindu University, Varanasi.

PhD GUIDENCE

Ten students registered with me at BHU for the PhD program.

STUDENT ACTIVITIES

Master degree dissertation guided at CSIR-NGRI

- Miss. Shanu Chauhan (2003)
- Mr. Das Gupta (2003)
- Miss. Naina Gupta (2004)
- Mr. Sarbind Ram (2005)
- Mr. Mahatim Bind (2005)
- Mr. Shariq Irfan Abbasi (2006)
- Mr. Ravi Srivastava (2007)
- Miss. Shweta Kumari (2007)
- Mr. Avinash Pandey (2007)
- Miss. Swati Goel (2008)
- Mr. Deepak Kumar (2008)
- Mr. Arun Panigrahi (2009)
- Mr. Trideep Banerjee (2009)
- Mr. Sooraj Kumar (2010)
- Mr. Jamshed (2010)
- Mr. Mahendra Kumar Pal (2011)
- Miss. Debjani Bhowmick (2011)
- Mr. Deepak Kumar Gupta (2011)
- Mr. Pabitra Singha (2011)
- Mr. Venkatesham K. (2011)
- Mr. Ankur Mundra (2012)
- Mr. Rishikesh Narayan (2012)

Summer Interns guided (Funded by Indian Academy of Sciences)

- Mr. Vivek Kumar (2013)
- Mr. Vishesh Seth (2013)
- Miss. K. S. S. Mounika (2014)
- Mr. Avrinder Singh Sandhu (2014)

- Miss. Reshma (2016)
- Mr. Rohit Khanna (2017)
- Mr. Tushar Goyal (2018)
- Miss. Srutakriti Sahoo (2018)

Dissertation thesis guided at BHU

1. Mr. Puneet Pavan Upadhyay (2016): Deconvolution Technique in Seismic Data Processing.
2. Mr. Shivlok Ranjan (2017): Noise analysis and multiple attenuation from seismic data.
3. Mr. Sachin Kumar (2017): Characterization of gas hydrate and free gas from AVO attributes in KG basin.
4. Mr. Dhanajay Rai (2017): Seismic velocity analysis.
5. Mr. Abhishek Sharma (2018): Estimation of gas hydrate saturation using well log data: a case study of Gulf of Mexico.
6. Mr. Amritansh Rai (2018): Estimation of pore filling gas hydrate saturation using well log data at Green Canyon, Gulf of Mexico.
7. Miss. Shikha Srivastava (2018): Pore pressure prediction in the continental margin of India.
8. Mr. Nitesh Kumar (2019): Seismic data processing of 2D seismic data.
9. Miss. Archita Pandey (2019): Remote sensing and GIS approach for delineation of ground water potential in Mussoorie hills, Uttarakhand.
10. Deepak Kumar Bharti (2019): Evaluation and interpretation of formation parameters using well log data.
11. Astha Singh (2020) An insight into seismic anisotropic patterns below the Eastern Ghats Mobile Belts and its adjoining areas using direct S waves.
12. Alok Kumar Tiwari (2020) Characterization of ambient seismic noise and its implications on site selection.
13. Soumya (2020) Formation evaluation using wire line log data of Mumbai high.
14. Vikah Singh (2020) Estimation of Formation water resistivity, volume of shale and depositional environment using well logs has been carried out for well having sandstone lithology.
15. Ashif Ali (2021) Earthquake harza update in Andaman Nicobar Island.
16. Ashish Kumar Singh (2021) Analysis of petrophysical properties using log data: A case study from F3 block of North Sea, Neatherlands.
17. Nazima Anshari (2021) Processing of seismic ambient noise data to obtain reliable broad-band surface wave dispersion measurements.
18. Arun Jaisal (2021) Hypothetical earthquake location in homogeneous medium: least square method.
19. Murari Bhushan (2021) Calculation of Geoid undulations using Matlab over India.
20. Sivangi Bharadwaj (2022) Estimating the thickness of Gas Hydrate Stability zone in Blake Ridge area and influence of various factors on it.
21. Subham Gangajali (2022) Estimation of Gas Hydrate saturation using resistivity log data in Alaminos Canyon, Gulf of Mexico.
22. Manish Singh (2022) Assessment of gas hydrate saturation using Sonic well log data in Alminos Canyon-21A, Gulf of Mexico, USA.
23. Pankaj (2022) Determination of Cole-Cole parameters using Induced polarization data.

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