

# CURRICULUM VITA

**Dr. BANAJARANI PANDA**

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## **a. Education and career history:**

| EXAMINATION                                                                                                                                     | BOARD / UNIVERSITY              | YEAR OF PASSING | PERCENTAGE OF MARKS                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------|----------------------------------------------------------------|
| <b>Ph.D. (A study to identify the mountain front recharge in the foothills along the northwestern part of Tirunelveli District, Tamil Nadu)</b> | Annamalai University, Tamilnadu | 2019            | Awarded                                                        |
| <b>M.Sc. (Geology)</b>                                                                                                                          | Annamalai University, Tamilnadu | 2014            | 8.2 CGPA grade point<br>First class with Distinction           |
| <b>PG Diploma in REMOTE SENSING&amp; GIS</b>                                                                                                    | Annamalai University, Tamilnadu | 2013            | 7.8 CGPA grade point<br>with 1 <sup>st</sup> class distinction |
| <b>B.SC. (GEOLOGY)</b>                                                                                                                          | Ravenshaw University, Odisha    | 2012            | 82% (Hons) 1 <sup>st</sup> div. with<br>DISTINCTION            |
| <b>Intermediate studies</b>                                                                                                                     | CHSE, Odisha                    | 2009            | 78%                                                            |
| <b>Schooling</b>                                                                                                                                | BSE, Odisha                     | 2007            | 89%                                                            |

## **b. Work Experience:**

| Name of the Organization            | Designation         | Status    | Pay Scale / Consolidate salary | From                          | To                             | Time Period         |
|-------------------------------------|---------------------|-----------|--------------------------------|-------------------------------|--------------------------------|---------------------|
| University of Nebraska Lincoln, USA | Intern              | Temporary | \$2,500                        | 15 <sup>th</sup> May 2018     | 14 <sup>th</sup> November 2018 | 6 Months            |
| Bhadrak Autonomous College          | Guest Faculty       | Temporary | 25,000                         | 11 <sup>th</sup> July 2019    | 31 <sup>st</sup> March 2020    | 7 Months<br>20 Days |
| Central Groundwater Board (CGWB)    | Young Professional  | Temporary | 42,500                         | 1 <sup>st</sup> November 2020 | 3 <sup>rd</sup> March 2022     | 1.4 Years           |
| Ravenshaw University                | Assistant Professor | Permanent | 57,700                         | 4 <sup>th</sup> March 2022    | Continuing                     | Nil                 |

## **Software skills:**

\* ARCGIS \* MapInfo \*SPSS version 10 \*AQUACHEM \*WATCLAST \*WATEQ4F  
\* PHREEQC \* ORIGIN \* PGDCA (1<sup>st</sup> class with 73%) \*Surfer version 13 \*QGIS \*Rock Works.

**Instrumentation Skill:** Dionex Ion Chromatograph ICS-90; IC-PMS: iCap RQ (Including water and soil samples); analysis of water samples in IRMS (Isoprime-dual inlet), Spectrophotometer (Fe II measurement); UV-Spectrophotometer (Hach DR-6000); Flame Photometer (CL-376); Laser Fluorimeter (Total U measurement); TOC Analyser (Shimadzu ).

### **Publications in Conference Proceedings:**

1. A study on the water table fluctuation along the foothill of Courtallam hills, Tirunelveli District, Tamilnadu. National Seminar on Recent Developments and Challenges in Geochemistry GEOCHEM (26<sup>th</sup>-27<sup>th</sup> March 2015, Annamalai University, Department of Earth sciences).
2. The study on the water level variations in a hard rock aquifer - a case study from Tirunelveli district, Tamil Nadu. National level conference on Disaster Mitigation and management towards sustainable development (DMSD-2015), (16<sup>th</sup>-17<sup>th</sup> April 2015, Periyar University Department of Geology).
3. A preliminary assessment of groundwater chemistry along the foothills of Courtallam, Tirunelveli district, Tamil Nadu. Innovative technologies and field applications for sustainable water, wastewater and energy management. (7<sup>th</sup>-9<sup>th</sup>, January 2016, Bangalore University).
4. An attempt to understand the groundwater recharge along the mountain front of Courtallam region, Tamilnadu. International conference on Geosciences and environment (7<sup>th</sup> to 10<sup>th</sup> Jan 2016). Annamalai University, Tamil Nadu.
5. Study on the variation of the piezometric surface of groundwater and Hydrogeochemistry along the foothills of Courtallam, Tamil Nadu. National Seminar on past and present geochemical processes, Impacts on climate change (22<sup>nd</sup> -23<sup>rd</sup> December 2015, JNU).
6. A study on the aquifer response to Mountain Front recharge along the foothills of Courtallam. National conference on “Advances in Water Resource and Environmental Research (Sathyabama University, Chennai, Tamil Nadu, India, 29<sup>th</sup> – 30<sup>th</sup> June 2017).

### **Book chapter:**

1. **Panda B**, Chidambaram S, Ganesh N (2017) “**An attempt to determine the mountain front recharge (MFR) by using state of saturation index (SI) of carbonate minerals along the foothills of Courtallam, Tamil Nadu**”. S. Chidambaram (eds) *Groundwater: Hydrogeochemical Investigations Using Integrated Techniques*. ISBN:978-93-86546-47-0.
2. Devaraj N, Chidambaram S, **Panda B**, Thivya C, Tirumalesh K and Thilagavathi R (2018) “**Determination of anthropogenic sources in the groundwater chemistry along KT boundary of South India**” Manish Kumar Singh (eds) *Emerging Issues in the Water Environment during Anthropocene: A South East Asian Perspective*– **Springer**. (ISBN 978-93-81891-41-4).
3. **Panda B.**, Dhanu, R.V., Chidambaram, S., Arindam, M., Thilagavathi, R., Manikandan, S., Thivya, C., Ramanathan, A. L. & Ganesh, N. (2019). **Fluoride contamination in**

- groundwater – a gis & geostatistics reappraisal. In Senapathi et al. (eds), *GIS and Geostatistical Techniques for Groundwater Science-Elsevier*. ISBN: 9780128154137.**
4. Chidambaram, S., Pethaperumal, S., Thilagavathi, R., Radha, V. D., Thivya, C., Prasanna, M. V., & **Panda, B. R.** (2019). Seasonal Variations of Groundwater Geochemistry in Coastal Aquifers, Pondicherry Region, South India. In *Coastal Zone Management* (pp. 361-380). Elsevier.
  5. **Panda, B.**, Chidambaram, S., & Malakar, A. (2021). Survival of SARS-COV-2 in untreated and treated wastewater—a review. **Environmental Resilience and Transformation in Times of COVID-19**, 89–94. <https://doi.org/10.1016/B978-0-323-85512-9.00009-7>.
  6. **Panda, B.**, Chidambaram, S., Ganesh, N., Biswal, S., & Alsabti, B. (2025). Sustainable Management of Groundwater Along the Foothills Focusing on Mountain Front Recharge: A Global Review and Status with Regard to Indian Context. *Water Resources Management in Mountain Regions*, 383-408.

#### **Journals:**

1. **Panda B.**, S. Chidambaram and N. Ganesh (2016) “Geochemical signature to identify the foothill recharge and its extent – a case study near Tirunelveli, Tamilnadu” **Journal of applied hydrology**, Vol. XXIX, No. 1 to 4, pp. 67 – 77.
2. **Panda B.**, Chidambaram, S., Ganesh, N., (2017). An attempt to understand the subsurface variation along the mountain front and riparian region through geophysics technique in South India. **Model. Earth Syst. Environ.** DOI 10.1007/s40808-017-0334-8. (Volume 3, Issue 2, pp 783–797)
3. Thilagavathi, R., Chidambaram, S, **Banaja P**, Tirumalesh, K. Devaraj, N. Anil Kurmana (2017) Understanding the Decadal Variation of the Groundwater Resources along the Coastal Aquifers of Pondicherry – A Climate Change Perspective. **Journal of Climate Change**, Vol. 3, No. 2 (2017), pp. 25–42. DOI 10.3233/JCC-170012.
4. **Panda B.**, Chidambaram, S., Ganesh, N., Adithya, V.S., Prasanna, M.V., Pradeep, K., Vasudevan, U., (2018 b). A hydrochemical approach to the estimation of mountain front recharge in an aquifer system in Tamilnadu, India **Acta Geochim.** DOI 10.1007/s11631-017-0229-4. (Volume 37, Issue 3, pp 465–488)
5. **Panda B.**, S. Chidambaram, R. Thilagavathi, C.Thivya, N.Ganesh, N.Devraj (2018 a). Geochemical signatures of groundwater along mountain front and riparian zone of Courtallam, Tamil Nadu. **Groundwater Sustainability Development** <https://doi.org/10.1016/j.gsd.2017.10.003>. (ISSN: 2352-801X, Vol: 7, Page: 372-386)
6. **Panda B.**, Chidambaram, S., Ganesh, N., Adithya, V.S., Pradeep, K., Vasudevan, U., Ramanathan, A.L., Shyamranjan, Prasanna, M.V., Pradeep, K., (2018 c). A study on mountain front recharge by using integrated techniques in the hard rock aquifers of southern India. **Environ Dev Sustain** DOI 10.1007/s10668-017-9987-8. (vol. 20(5), pages 2243-2259)
7. N. Devaraj, S. Chidambaram, Rakesh Roshan Gantayat, C. Thivya, R. Thilagavathi, M. V. Prasanna, **Panda B.**, V. S. Adithya, U. Vasudevan, K. Pradeep, P. Paramaguru, N. Ganesh

- (2018 d). An insight on the speciation and genetical imprint of bicarbonate ion in the groundwater along K/T boundary, South India. **Arab J Geosci.** 11: 291. <https://doi.org/10.1007/s12517-018-3622-3>.
8. N. Devaraj, S. Chidambaram, **Panda B**, C. Thivya, R. Thilagavathi, N. Ganesh (2018). Geo-electrical approach to determine the lithological contact and groundwater quality along the KT boundary of Tamilnadu, India, **Model. Earth Syst. Environ.** (2018) 4: 269-279. <https://doi.org/10.1007/s40808-018-0424-2>
  9. Thivya C , Chidambaram S , Devaraj N , Thilagavathi R , **Panda B** , Tirumalesh K, Prasanna M.V, Vasudevan U, Ramanathan AL (2019) Geochemical process-based characterization of groundwater along the KT boundary of South India. **Chemie der Erde – Geochemistry**, [doi.org/10.1016/j.geoch.2018.11.005](https://doi.org/10.1016/j.geoch.2018.11.005) (Volume 79, Issue 1, April 2019, Pages 62-77).
  10. **Panda B**, Chidambaram S, Tirumalesh K, Ganesh N, Thivya C, Thilagavathi R, Venkatramanan S, Prasanna M.V, Devaraj N, Ramanathan A.L (2019) An integrated approach to understand the process of mountain front recharge and riparian zone aquifer system in Tamil Nadu, India: A first report. **Aquatic Geochemistry** [doi.10.1007/s10498-019-09357-8](https://doi.org/10.1007/s10498-019-09357-8).
  11. **Panda, B.**, Chidambaram, S., Thivya, C., Thilagavathi R., Tirumalesh K., Devaraj N. (2020) An attempt to determine the behavior of metals and their dependent thermodynamic saturation states in the groundwater along mountain front and riparian zone. **Environ Earth Sci** 79: 17. <https://doi.org/10.1007/s12665-019-8685-2>.
  12. Thivya, C., Chidambaram, S., Thilagavathi, R., Ganesh, N., **Panda, B.**, & Prasanna, M. V. (2018). Short-term Periodic Observation of the Relationship of Climate Variables to Groundwater Quality along the KT Boundary. **Journal of Climate Change**, 4(2), 77-86.
  13. Devaraj, N., Chidambaram, S., Vasudevan, U., Pradeep, K., Neolian, M., Prasanna, M. V., & **Panda, B.** (2020). Determination of the major geochemical processes of groundwater along the Cretaceous-Tertiary boundary of Trichinopoly, Tamilnadu, India. **Acta Geochimica**, 1-22.
  14. Rodriguez-Espinosa, P. F., Sabarathinam, C., Ochoa-Guerrero, K. M., Martínez-Tavera, E., & **Panda, B.** (2020). Geochemical evolution and Boron sources of the groundwater affected by urban and volcanic activities of Puebla Valley, south central Mexico. **Journal of Hydrology**, 584, 124613.
  15. Sivakarun, N., Udayaganesan, P., Chidambaram, S., Venkatramanan, S., Prasanna, M. V., Pradeep, K., & **Panda, B.** (2020). Factors determining the hydrogeochemical processes occurring in shallow groundwater of coastal alluvial aquifer, India. **Chemie der Erde – Geochemistry** , [DOI:10.1016/j.chemer.2020.125623](https://doi.org/10.1016/j.chemer.2020.125623).
  16. **Panda, B.**, Chidambaram, S., Thilagavathi, R., Ganesh, N., Prasanna, M. V., & Vasudevan, U. (2020). Source governed trace metal anomalies in groundwater of foothill aquifer and its health effect. **Applied Water Science**, 10(7), 1-10.
  17. Malakar, A., Kaiser, M., Snow, D. D., Walia, H., **Panda, B.**, & Ray, C. (2020). Ferrihydrite Reduction Increases Arsenic and Uranium Bioavailability in Unsaturated Soil. **Environmental Science & Technology**, 54(21), 13839-13848.

18. **Panda, B.**, Sabarathinam, C., Nagappan, G., Rajendiran, T., & Kamaraj, P. (2020). Multiple thematic spatial integration technique to identify the groundwater recharge potential zones—a case study along the Courtallam region, Tamil Nadu, India. *Arabian Journal of Geosciences*, 13(24), 1-16.
19. Devaraj, N., **Panda, B.**, Chidambaram, S., Prasanna, M. V., Singh, D. K., Ramanathan, A. L., & Sahoo, S. K. (2021). Spatio-temporal variations of Uranium in groundwater: Implication to the environment and human health. *Science of The Total Environment*, 775, 145787.
20. Rajendiran, T., Sabarathinam, C., Chandrasekar, T., **Panda B.** et al. (2021). Geochemical variations due to salinization in groundwater along the southeast coast of India. *SN Appl. Sci.* 3, 581. <https://doi.org/10.1007/s42452-021-04551-2>.
21. Palanivel, P., Sabarathinam, C., Kamaraj, P., **Panda, B.**, Natesan, D., Mathivanan, M., ... & Alagappan, R. (2021). Assessment and evaluation of geochemical process in the groundwater of the coastal aquifers. *Acta Ecologica Sinica*.
22. **Panda, B.**, Chidambaram, S., Snow, D., Singh, D. K., & Ramanathan, A. L. (2022). Source apportionment and health risk assessment of nitrate in foothill aquifers of Western Ghats, South India. *Ecotoxicology and Environmental Safety*, 229, 113075.
23. Chidambaram, S., **Panda, B.**, Keesari, T., Prasanna, M. V., Singh, D. K., & Ramanathan, A. L. (2022). Isotopic signatures to address the groundwater recharge in coastal aquifers. *Marine Pollution Bulletin*, 174, 113273.
24. Chidambaram, S., Prasanna, M. V., Venkatramanan, S., Nepolian, M., Pradeep, K., **Panda, B.**, & Thilagavathi, R. (2022). Groundwater quality assessment for irrigation by adopting new suitability plot and spatial analysis based on fuzzy logic technique. *Environmental Research*, 204, 111729.
25. Kamaraj, P., Sabarathinam, C., Seshadri, H., **Panda, B.**, Karthikeyan, B., Viswanathan, P. M., & Nagappan, G. (2022). A study on geochemistry and sources of colloidal fractions in coastal groundwater from different lithologies. *Journal of Earth System Science*, 131(1), 1-18.
26. Pandit, P., Saini, A., Chidambaram, S., Kumar, V., **Panda, B.**, Ramanathan, A. L., & Mehra, R. (2022). Tracing geochemical sources and health risk assessment of uranium in groundwater of arid zone of India. *Scientific Reports*, 12(1), 1-12.
27. Rajendiran, T., Sabarathinam, C., **Panda, B.**, & Elumalai, V. (2023). *Influence of Dissolved Oxygen, Water Level and Temperature on Dissolved Organic Carbon in Coastal Groundwater. Hydrology 2023*, 10, 85.
28. Kamaraj, P., Jothimani, M., **Panda, B.**, & Sabarathinam, C. (2023). Mapping of groundwater potential zones by integrating remote sensing, geophysics, GIS, and AHP in a hard rock terrain. *Urban Climate*, 51, 101610.
29. Jayaramu, Y., **Panda, B.**, Al-Rashidi, A., Kumar, U. S., Sabarathinam, C., Akbar, A., & Palanivel, P. (2024). Unravelling the impact of microclimatic changes on coastal aquifer of multiple land use through integrated techniques: A comparative study using two decadal data. *Groundwater for Sustainable Development*, 26, 101239.

30. Mohanty, L. K., **Panda, B.**, Samantaray, S., Dixit, A., & Bhange, S. (2024). Analyzing water level variability in Odisha: insights from multi-year data and spatial analysis. *Discover Applied Sciences*, 6(7), 363.

#### **Projects:**

1. Dissertation project on “**Analysis of carbon content in mangroves sediment of Pichavaram, Tamil Nadu**”.
2. Summer training project on “**Mapping, Survey mining and exploration**” for 21 days in Odisha Mining Corporation from 3<sup>rd</sup> to 29<sup>th</sup> June, 2013.

#### **Field Knowledge:**

1. A structural **mapping of hard rock terrain in Vellakovil area**, Thirupur dist. Tamil Nadu (December 15<sup>th</sup> -19<sup>th</sup>, 2012).
2. Industrial visit to **Chettinad Cement Corporation Pvt. Ltd.**, Tamil Nadu (21<sup>st</sup> December 2012).
3. Mines visit to **Seethainagar Limestone Mines, Bhuvaneswari magnesite mines, Quartz & feldspar mines** of Kodantur (south), Pungambadi (west) area of Tamil Nadu, 22<sup>nd</sup>-25<sup>th</sup> December, 2013.

#### **Training, workshop, symposium and conferences attended:**

1. Training programme attended in **NIOT (National Institute of Ocean Technology)** for 5 days held in Chennai on Coastal Management (December 15<sup>th</sup> to 20<sup>th</sup>, 2013).
2. Attended a 5days training programme on placer deposits in **Annamalai University** on 2014.
3. Training programme attended in **Integrated Coastal and Marine Area management – project Directorate (ICMAM – PD)** for 5 days held in Chennai on **Numerical Modelling (Mike 21)** for Coastal Hazards (13<sup>th</sup> -17<sup>th</sup>, June 2016).
4. 21 days summer/winter school on “Geospatial Technology & Its Applications” (20<sup>th</sup> March to 9<sup>th</sup> April 2017), **Tata Institute of Social Sciences**, Mumbai.
5. Theme meeting on “Analysis, remediation of potable water from Arsenic, Fluoride, Uranium and source apportionment using isotope and hydrological techniques” at **Bhabha Atomic Research Centre**, Trombay, Mumbai – 400 085 (July 14<sup>th</sup> -15<sup>th</sup>, 2017).
6. The Annual "Science and Research Opportunities" event is being held at **Chicago University, Chicago, USA** from September 7-9, 2018.
7. The training “ **The use of the Noble Gases in Hydrological Studies: Part 1**” being held through virtual mode by **IAEA, Vienna, Austria** on 7<sup>th</sup> to 10<sup>th</sup> May, 2024.
8. The training “ **The use of the Noble Gases in Hydrological Studies: Part 2**” being held at **IAEA, Vienna, Austria** on 14<sup>th</sup> to 18<sup>th</sup> October, 2024.
9. The National Conference on “**Geological Frontiers: Advancing knowledge, understanding for a sustainable future**” at **Dharanidhar University, Keonjhar, Odisha** from 1<sup>th</sup> to 12<sup>th</sup> August, 2025.

## Paper/poster presented

1. Presented a paper entitled “**Geochemical signatures to understand mountain front recharge along Courtallam region, Tamil Nadu**” in the International Conference on Environmental Science and Climate Change at **Karunya University** (7<sup>th</sup> to 9<sup>th</sup> December 2016).
2. Presented a paper entitled “**A hydrochemical approach to understand mountain front recharge near Courtallam**” in the National level seminar on “Impact on Earth resources and future challenges” at Department of Geology, **Periyar University, Salem, Tamil Nadu**, (23<sup>rd</sup> - 24<sup>th</sup> March 2016).
3. Presented paper entitled “**A study on the aquifer response to Mountain Front recharge along the foothills of Courtallam**” in the national conference on “Advances in Water Resource and Environmental Research: at **Sathyabama University**, Chennai, Tamil Nadu, India, (29<sup>th</sup> – 30<sup>th</sup> June 2017).
4. Presented paper entitled “**An attempt to understand the mechanism of recharge in the mountain front and the riparian zone aquifers using integrated techniques**” in the “International Symposium on Sustainable Urban Environment (ISSUE 2017)” at the Department of Environmental science, **Tezpur University**, Assam, India (23<sup>rd</sup> -24<sup>th</sup> June 2017).
5. Presented a poster entitled “**Influence of the Vadose Zone on groundwater pollution**” in the Annual "Science and Research Opportunities in India" event was being held at **Chicago University, Chicago, USA** (7<sup>th</sup>-9<sup>th</sup> September 2018). Sponsored by “SCI-ROI and University of Chicago”.
6. Presented a poster entitled “**Mitigation of surface and groundwater pollutants of Missouri and Arkansas River Basins**” event” **National Institutes for Water Resources Regional Symposium Water Resources of the US Great Plains Region: Status and Future** “was being held at **Nebraska water center, DWFI, University of Nebraska Lincoln, USA** (24<sup>th</sup> - 26<sup>th</sup> October 2018). sponsored by “Nebraska Water Center, Daugherty Water for Food Global Institute at the University of Nebraska, USDA NIFA, USGS Nebraska Water Science Center, NIWR, EPSCOR Nebraska, UNL IANR”
7. Presented paper entitled “**Impact of agricultural practices on groundwater resources along the foothill aquifer**” at International symposium on Irrigation and Drainage in Arid and Semi-arid Zones organized by **Kuwait Institute for Scientific Research (KISR), Kuwait** (5<sup>th</sup> - 7<sup>th</sup> December 2018).

## Achievements:

1. Awarded with a national scholarship from **INSPIRE (Department of science and technology, Government of India)** for 5 years in 2009.
2. Awarded as **JRF** by DST (SERB) project entitled as “**Estimation and identification of spatial extent of mountain front recharge in the foothills of Courtallam, Tamilnadu, India**” from 2015-16.
3. Bestowed with **Inspire fellowship from DST**, Government of India for five years in the year of 2016.

4. Awarded by **Indo-US & Technology Forum (IUSSTF)** for Indo-US **Water Advanced Research and Innovation (WARI)** Internship program for a period of **6 Months** to undertake research at **University of Nebraska Lincoln, USA** in the area of **“Influence of Vadose Zone in the Geochemistry of Recharging Groundwater”**.

**Awards:**

5. Won **“The best Young scientist of the year 2016”** award for the paper entitled **“Geochemical signatures to understand mountain front recharge along Courtallam region, Tamil Nadu”** in International Conference on Environmental Science and climate change at Karunya University 7<sup>th</sup> -9<sup>th</sup> December 2016.
6. Won **best mini project** entitled **“Detection of air pollution monitoring of an industrial area: A case study of Gujarat –GIDC using GIS technique”** in 21 days summer/winter school (GeoTia, 2017) at TISS, Mumbai 20<sup>th</sup> March to 9<sup>th</sup> April 2017.
7. Won **best paper award** entitled **“A study on the aquifer response to Mountain Front recharge along the foothills of Courtallam”** in National conference on “Advances in water Resource and Environment Research” at Sathyabama University, Chennai, 29<sup>th</sup> -30<sup>th</sup> June 2017.

**Personal Profile:**

|                      |                         |
|----------------------|-------------------------|
| Gender               | : Female                |
| Language Proficiency | : Oriya, Hindi, English |
| Date of birth        | : 16-May-1992           |

**Strength:**

- Hard work with smart thinking.
- Expertise to work in a team.
- Good communication skills.

**Date:** 19.08.2025

**Place:** Cuttack, Odisha

*Banaja sani panda*

**(BANAJARANI PANDA)**

