

CURRICULAM VITAE

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ACADEMICS

- **B.Sc. (H) Geology**
Institute: Centre of Advanced Studies (Geology), Delhi University; Year: 2006–2009
- **M.Sc. Geology**, Specialization: Experimental structural geology
Institute: Centre of Advanced Studies (Geology), Delhi University; Year: 2009–2011
- **Ph.D.**, Specialization: Sedimentology, Clay Mineralogy, Geochemistry, Glauconite
Institute: Indian Institute of Technology, Bombay; Year: 2011–2017; Degree Awarded: 12/08/2017
Title of thesis: Origin, stratigraphic influence and geochemical characteristics of Cretaceous glauconites in Peninsular India.

PROFESSIONAL EXPERIENCE

- **Research Associate (Post-Doc)** in Palaeozoology Section of Museum for Mineralogy and Geology from 1st November 2019 to 31st May 2021. Institute: Senckenberg Naturhistorische Sammlungen Dresden, Germany
- **National Post-Doctoral Fellowship (NPDF)** sponsored by the Science and Engineering Research Board (SERB). Research Grant: 2,00,000/-INR per annum from 04/10/2017 to 03/10/2019
Institute: Indian Institute of Technology, Roorkee, India
- **Research Associate** in Department of Earth Sciences from 19th June 2017 to 31st August 2017
Institute: Indian Institute of Technology Bombay

PAPERS PUBLISHED:

- Wilmsen, M., and **Bansal, U.**, 2021. Depositional setting and limiting factors of early Late Cretaceous glaucony formation: implications from Cenomanian glauconitic strata (Elbtal Group, Germany). *Facies* 67:24, 1-26.
- **Bansal, U.**, Banerjee, S., Nagendra, R., 2020. Is the rarity of glauconite in Precambrian Bhima Basin in India related to its chloritization. *Precambrian Research*, 336, 1-14.
<https://doi.org/10.1016/j.precamres.2019.105509>

- Bansal, U., Banerjee, S., Pande, K., Ruidas, D., 2020. Unusual seawater composition of the Late Cretaceous Tethys imprinted in glauconite of Narmada basin, central India. *Geological Magazine*, 157(2), 233–247. Doi: [10.1017/S0016756819000621](https://doi.org/10.1017/S0016756819000621)
- **Bansal, U.**, Pande K., Banerjee, S., Nagendra, R., Jagadeesan, K.C., 2019. The timing of oceanic anoxic events in the Cretaceous succession of Cauvery basin: constraints from $^{40}\text{Ar}/^{39}\text{Ar}$ ages of glauconite in the Karai Shale Formation. *Geological Journal*, 54, 308–315, <https://doi.org/10.1002/gj.3177>
- **Bansal, U.**, Banerjee, S., Ruidas, D.K., Pande, K., 2018. Origin and geochemical characterization of Maastrichtian glauconites in the Lameta Formation, Central India. *Journal of Palaeogeography*, 7, 2, 99–116
- **Bansal, U.**, Banerjee, S., Pande, K., Arora, A., Meena, S.S., 2017. The distinctive compositional evolution of glauconite in the Cretaceous Ukra Hill Member (Kutch basin, India) and its implications. *Marine and Petroleum Geology*, 82, 97–117
- Banerjee, S., **Bansal, U.**, Pande, K., Meena, S.S., 2016. Compositional variability of glauconites within the Upper Cretaceous Karai Shale Formation, Cauvery Basin, India: Implications for evaluation of stratigraphic condensation. *Sedimentary Geology*, 331, 12–29
- Banerjee, S., **Bansal, U.**, Thorat, A.V., 2016. A review on palaeogeographic implications and temporal variation in glaucony composition. *Journal of Palaeogeography*, 5, 1, 43–71
- Chatteraj, S.L., Banerjee, S., Saraswati, P.K., **Bansal, U.**, 2016. Origin, Depositional Setting and Stratigraphic Implications of Palaeogene Glauconite of Kutch. *Special Publication of the Geological Society of India*, 6, 75–88

ABSTRACTS PUBLISHED IN CONFERENCE JOURNALS

- **Bansal, U.**, Banerjee, S., Ruidas, D.K., Pande, K., 2017. Origin and geochemical characterization of Maastrichtian glauconites in the Lameta Formation, Central India. 3rd International Palaeogeography Conference, held on 23rd–25th September 2017 at Chengdu, China
- Banerjee, S., **Bansal, U.**, Pande K., 2014. Geochemical characteristics of glauconite within transgressive deposits of Early to Late Cretaceous Karai Shale, Cauvery Basin, India. 19th International Sedimentological Congress, IAS, 2014, held on 18th – 22nd August at Geneva, Switzerland
- **Bansal, U.**, 2016. Compositional variability of Mesozoic glauconites in response to depositional conditions. National Geo-Research Scholars Meet held on 1st–4th June 2016 at Wadia Institute of Himalayan Geology, Dehradun

- **Bansal, U.,** Banerjee S., 2014. Influence of depositional environment on geochemical characteristics of glauconites: study from Karai Shale Formation (Cauvery Basin) and Lameta Formation (Narmada Basin). National Conference on “Sedimentation and Stratigraphy” and XXXI ISC Convention of Indian Association of Sedimentologists, held on, 12th –14th November 2014 at Savitribai Phule Pune University, Pune

POSTER PRESENTATIONS IN CONFERENCES

- **Bansal, U.,** Banerjee, S., Ruidas, D.K., 2018. Compositional evolution of glauconite within the Upper Cretaceous Bagh Group of sediments, India. EGU General Assembly 2018, held on 8th-13th April at Vienna, Austria
- Banerjee, S., **Bansal, U.,** Pande, K., 2017. Influence of depositional condition and stratigraphic context on chemical compositions of Cretaceous glauconites in peninsular India. 33rd IAS & 16th ASF joint International Meeting of Sedimentology 2017, held on 10th –12th October 2017 at Toulouse
- Banerjee, S., **Bansal, U.,** Pande, K., 2016. Mineral chemical analysis of glauconites within the Upper Cretaceous Karai Shale Formation for evaluation of stratigraphic condensation. AAPG 2016 Annual Convention & Exhibition (ACE), held on 19th –22nd June at Calgary, Alberta

PROJECTS AND INTERNSHIPS

- **Summer Research Fellowship Programme 2009:**
Project title: Nature of fluid flow between two rigid plates, under the guidance of Prof. **Nibir Mandal** from May to July 2009. **Highlights:** Study of fractal patterns of viscous fluids when compressed uniformly between two plates.
- **Summer Research Fellowship Programme 2010:**
Project title: Effects of Non-Newtonian rheology on viscous fingering patterns – an experimental study, under the guidance of Prof. **Nibir Mandal** from May to July 2010. **Highlights:** Understanding the viscous fingering-fractal patterns of Non-Newtonian fluids under uniform compression between two plates.
- **Wadia Institute of Himalayan Geology** (May to July 2008): The 53 days training comprised of geological field and laboratory training. Laboratory techniques included grain size analysis, heavy mineral separation, SEM, XRD and EPMA

FIELD TRAINING/WORKSHOPS

- Geological field training in **Cretaceous** sections in **Cauvery, Kutch and Narmada Basins** (Ph.D): The field work included stratigraphic sampling of the Cretaceous sections of Kutch, identification of different stratigraphic contacts, major unconformities on the basis of sedimentology
- Geological field training in Precambrian sections in Narnaul, Haryana (M.Sc): The field work included contact and structural mapping, fold analysis and a visit to the Khetri Copper Ore Mines
- Geological field training in and around Chandigarh, Jabalpur and Jaipur (B.Sc): The field work included geological mapping of the area, strain analysis, litholog preparation
- Active participant of National Level Field Based Workshop organized by Department of Earth and Environment Science, KSKV Kachchh University from 26th to 29th January 2012

ANALYTICAL SKILLS

- **Sample Processing:** Separation of clay minerals from rock samples for geochemical and mineralogical analysis
- **Thin section Petrography:** Petrographic observations were carried out using Leica DM 4500P polarizing microscope
- **Field Emission Gun Scanning Electron Microscope (FEG–SEM):** SEM images provided information about the ultrastructure of clay minerals
- **X-ray diffraction (XRD):** X-Ray diffraction peaks were studied to identify different clay minerals
- **Infra-Red (IR) Spectroscopy:** IR spectra gave valuable insights about clay mineral structure
- **Mössbauer Spectroscopy:** Mössbauer Spectra were studied to calculate $\text{Fe}^{2+}/\text{Fe}^{3+}$ ratio to undertake structural analysis
- **X-Ray Microscopy (XRM):** XRM images revealed the internal structure of the clay mineral
- **Electron Probe Micro Analyzer (EPMA):** The major element geochemistry of the clay minerals and substrates was determined using EPMA
- **Inductively Coupled Plasma Mass Spectrometer (ICP–MS):** Rare Earth Elements (REE) analysis was carried out using ICP-MS
- **$^{40}\text{Ar}/^{39}\text{Ar}$ dating** of glauconite pellets yielding accurate ages

AWARDS AND HONOURS

- Awarded **‘Excellence Award in Ph.D. Research’** at 57th Convocation, Indian Institute of Technology Bombay, 2019
- Awarded **‘Best Presentation by Young Scientists’** at the 3rd International Palaeogeography Conference, 2017
- Reviewer of **Journal of Earth System Science** and **Marine and Petroleum Geology**
- Recipient of **SERB–International Travel Support (ITS)** for attending EGU General Assembly 2018
- Recipient of **CSIR-UGC NET scholarship (Rank 34)** to carry out research in Sciences in India, 2011
- Recipient of **Summer Research Fellowship twice** to carry out research projects in India, 2009 and 2010

MEMBERSHIPS

- SEPM Society for Sedimentary Geology
- International Association of Sedimentologists (IAS)
- European Geosciences Union (EGU)

COMPUTER SKILLS

- Corel DRAW suite, Adobe Photoshop, Highscore+