

Curriculum vitae

Dr. Hireद्या Chauhan



Scientist-C

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Office Address: Wadia Institute of Himalayan Geology, 33, General Mahadev Singh Road, Dehradun-248001, Uttarakhand (India).

Research gate: <https://www.researchgate.net/profile/Hiredya-Chauhan>

Google scholar: <https://scholar.google.com/citations?user=6fhERj0AAAAJ&hl=en>

Field of Specialization: Igneous Petrology, Geochemistry, Mineralogy, Geochronology

Education:

Ph.D.: Department of Geology, University of Delhi, PhD degree awarded-2018.

Topic-“Mineral chemical and Geochemical Constraints on the petrogenesis of Tonalite-Trondjemite-Granodiorite Gneiss and associated K-rich Granites of the Aravalli and the Bundelkhand Cratons of Central India”.

M.Sc. Geology: Department of Geology (2009-2011), University of Delhi.

M.Sc Dissertation Thesis entitled- “Geochemistry and Petrogenesis of Granitic Gneisses from western Bundelkhand craton – A Preliminary Approach”.

B.Sc(H). Geology: Department of Geology (2006-2009), University of Delhi.

Professional Experience:

Scientist-C: Wadia Institute of Himalayan Geology, Dehradun, India (10th July, 2023 - - continue)

Project Scientist: Wadia Institute of Himalayan Geology, Dehradun, India (13th February, 2023- 06th July, 2023)

Post-Doctoral Fellow (UGC-Dr. D.S. Kothari Postdoctoral Fellowship): Inter-University Accelerator Centre, New Delhi (3rd February, 2020-2nd February, 2023).

Research Scientist-B: EPMA, Mantle Petrology Lab, Banaras Hindu University, Varanasi (5th February, 2019- 1st February, 2020)

Project Fellow: Jamia Millia Islamia University, New Delhi (1st May, 2018 –31st January, 2019)

Award & Fellowship

- Awarded UGC-Dr. D.S. Kothari Post-Doctoral Fellowship (2020).
- Received the International Travel Grant from DST-SERB to participate in the International Conference, 2018.
- Received the International Travel Grant from the University of Delhi (2016).
- Awarded under University Grant Commission - CAS-SMS for Science Meritorious Fellowship in PhD (2012-2017). Worked as JRF (2012-2014), and SRF (2014-2017).

Workshop Attended

- Participated in workshop entitled- “Computational thermodynamics and fluid dynamics with the ENKI software portal: An introduction aimed at early career researchers” held at Boston, USA, 2018
- Participated in workshop entitled- “Mathematical applications in Mineralogy and Petrology” by Prof. Yury Voytekhovskiy held at University of Kashmir (2013).
- Field visit to examine sedimentary succession in Vienna during EGU Conference (2015).

Training in Various Research Labs:

- XRF, ICPMS at the Wadia Institute of Himalayan Geology, Dehradun.
- XRF, SEM at the Delhi University.
- EPMA at GSI, Faridabad, IIT- Bombay, BHU, Varanasi.
- SEM at Banaras Hindu University.
- U-Pb, ID-TIMS at Kola Institute, Apatity, Russia.
- TIMS laboratory, Isotope Geology and Geochronology at IIT Roorkee.
- HR-SIMS at Inter University Accelerator Centre (IUAC), New Delhi.
- XRD at Inter University Accelerator Centre (IUAC), New Delhi

Publications

1. **Hiredya Chauhan, Ashima Saikia and Talat Ahmad (2018)**. Episodic crustal growth in the Bundelkhand Craton of central India shield: Constraints from petrogenesis of the Tonalite-Trondhjemite-Granodiorite gneisses and K-rich granites of Bundelkhand tectonic zone, *Journal of Earth System Science*, 127(3), pp. 1-34.

2. **Hiredya Chauhan, Aparajita Tripathi, Dinesh Pandit, N.V.Chalapathi Rao and Talat Ahmad (2020)**. A new Analytical Protocol for high precision U-Th-Pb Chemical Dating of Xenotime from the TTG Gneisses of the Bundelkhand Craton, Central India, using CAMECA SXFive Electron Probe Micro Analyzer- *Journal of Earth System Sciences*, 129(1), pp 1-10.

3. **Hiredya Chauhan, Nishchal Wanjari, Avinash C. Pandey, Talat Ahmad (2023)**.

Geochemistry, Petrogenesis and Tectonic Setting of the Mafic Dykes from the Amgaon and Khairagarh Regions, Bastar Craton, Central Indian Shield: Constraints on the Precambrian Crustal Evolution. *HSOA Journal of atmospheric and earth sciences*. D.O.I - 10.24966/AES-8780/100030.

4. **Hiredya Chauhan, Dinesh Pandit, Talat Ahmad, Rohit Kumar Giri, Avinash C. Pandey (2023)**.

"Formation of Manganoan ilmenite in the Archean tonalite- trondhjemite-granodiorite (TTG) gneisses inferred from re-equilibration of biotite and Fe-Ti oxide assemblage: a case study from the Aravalli Craton, North Western India."
Accepted in *Neues Jahrbuch Für Mineralogie Journal*.

5. **Bibhuti Gogoi, Hiredya Chauhan, and Ashima Saikia (2020)**. Understanding mafic-felsic magma interactions in a subvolcanic magma chamber using rapakivi feldspar: a case study from the Bathani volcano-sedimentary sequence, eastern India. *Cheme der Erde, Geochemistry*, p. 125730.

6. *Bibhuti Gogoi, Hirelya Chauhan (2021)*. Significance of viscous coalescence in the migmatites of Assam-Meghalaya Gneissic complex, eastern India. *The Canadian Mineralogist*.
7. *Bibhuti Gogoi, Hirelya Chauhan, and Ashima Saikia (2020)*. Viscous dilation as a mechanism of magma mixing in the Ghansura Rhyolite Dome of Bathani volcano-sedimentary sequence, Eastern India. *Periodico di Mineralogia*, 89 (3).
8. *Bibhuti Gogoi, Hirelya Chauhan, Gaurav Hazarika, Amiya Baruah, Mukunda Saikia & Pallab Jyoti Hazarika (2020)*. Significance of viscous folding in the migmatites of Chotanagpur Granite Gneiss Complex, eastern India. *Earth and Environmental Science Transactions of the Royal Society of Edinburgh*, 111(2), pp. 119-134.
9. *Luc Achille Ziem A Bidias, Hirelya Chauhan, Mekala Ram Mohan, N.V Chalapathi Rao (2021)*. Green Core Clinopyroxenes from basanites of Petpenoun Volcanoes, Noun Plain, Cameroon volcanic line: chemistry and genesis. *Bulletin of Volcanology*.
10. *Bibhuti Gogoi, Gaurav Hazarika and Hirelya Chauhan (2020)*. Origin of porphyritic texture by magma mixing in the andesitic rocks of Ghansura Rhyolite Dome from the Bathani volcano-sedimentary sequence, eastern India. *Geochemical Journal*.
11. *Talat Ahmad, Ibrahim Yousuf and Hirelya Chauhan (2022)*. Petrogenesis and tectonic settings of Proterozoic mafic magmatism from the Northern Indian Shield and the Himalaya: possible role of plume-continent mantle lithosphere interaction. *The Geological Society Special Publications*.
12. *Padmaja J., Tapabrato Sarkar, Somnath Dasgupta, Jitendra K. Dash, Rajneesh Bhutani and Hirelya Chauhan (2021)*. High pressure granulite facies metamorphism of the Bastar craton at the interface of Eastern Ghats Belt, India: Implications for growth of the Greater Indian Landmass. *Precambrian Research*.
13. *Bibhuti Gogoi, Hirelya Chauhan (2021)*. Dynamics of a subvolcanic magma chamber inferred from viscous instabilities owing to mafic-felsic magma interactions. *Arabian Journal of Geosciences*.

- 14.** *Bibhuti Gogoi, Gaurav Hazarika, Hiredyia Chauhan, Sowrav Saikia (2021).* Role of viscous swirling in the formation of magnetite ocelli or fleck structure in the migmatites of Shillong Plateau Gneissic Complex, eastern India. *Geochemical Journal*
- 15.** *Shradha Shukla, Hiredyia Chauhan, Ibrahim Yousuf, Talat Ahmad (2021).* Bulk Rock and Mineral Chemistry of Metasediments from Mahakoshal Supracrustal Belt, Central Indian Tectonic Zone: constraints on weathering, provenance, paleoclimate and metamorphism". *Journal of Sedimentary Environments*.
- 16.** *Arathi G Panicker, Ram Mohan Mekala, Dewashish Upadhyay, Vikram R Balaboina, Hiredyia Chauhan, NV Chalapathi Rao (2021).* U-Pb zircon age, geochemistry and petrogenesis of Mesoarchean anorthositic rocks from the Holenarsipur Greenstone Belt, Western Dharwar Craton: Implications for accretionary tectonics in southern India. *Lithos*.
- 17.** *Irfan Bhatt, Hiredyia Chauhan, Talat Ahmad (2022).* Ladakh Himalayan Ophiolites (LHO):A Geological Heritage of Northwestern India. *Geoheritage Journal*.
- 18.** *Irfan Bhatt, Hiredyia Chauhan, Talat Ahmad (2023).* Geochemistry and petrogenesis of ophiolitic rocks from the Indus Suture Zone (ISZ), Ladakh Himalaya: insights for depleted mantle beneath an intra-oceanic island arc complex. *International Geology Review*. D.O.I – 10.1080/00206814.2023.2185824
- 19.** *Gaurav Hazarika, Pallabi Basumatary, Tribujjal Prakash, Hiredyia Chauhan, Bibhuti Gogoi (2022).* Magma mixing dynamics in a vertically zoned granitic magma chamber inferred from feldspar disequilibrium assemblage and biotite composition: a case study from the Mikir Massif, eastern India. *Acta Geochimica*
- 20.** *Deepshikha Borah, Hiredyia Chauhan, Ashima Saikia, Bibhuti Gogoi (2023).* Petrogenesis of high-Mg andesites from the Proterozoic Shillong Basin, Northeast India: evidence for continuation of the Central Indian Tectonic Zone to the Assam-Meghalaya Gneissic Complex and its implications for the Columbia supercontinent reconstruction. *International Geology Review*. D.O.I – 10.1080/00206814.2023.2209806

International Conferences / Presentations:

1. Hirelya Chauhan, Ashima Saikia, Talat Ahmad, Tatiana Kaulina and Tamara Bayanova (2018; Oral).

Role of TTGs in Deciphering Crustal Evolution: Case study from the Aravalli-Bundelkhand Protocontinent, India held at Goldschmidt Boston 2018.

2. Hirelya Chauhan, Ashima Saikia, Talat Ahmad, Tatiana Kaulina and Tamara Bayanova (2017; Oral).

Archean TTG and associated K-granite petrogenesis: Mineral Chemistry and Geochemical perspective held at Goldschmidt Paris 2017.

3. Hirelya Chauhan, Ashima Saikia, Talat Ahmad, Tatiana Kaulina and Tamara Bayanova (2016; Oral).

TTG and the genesis of early continental crust: Insights from the Aravalli-Bundelkhand protocontinent, India held at Goldschmidt Yokohama 2016, Japan, during 26th June- 1st July, 2016.

4. Hirelya Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2015; poster).

U-Pb ID-TIMS zircon ages of TTG gneisses of the Aravalli Craton of India held at European Geosciences Union (EGU), Vienna, Austria during April 12-17, 2015.

5. Oral presentation on PhD research work in relation to the Indo-Russian prospects during my visit to Russia in January 2012 at Kola Institute, Russian Academy of Science.

National Conferences / Presentations:

6. Hirelya Chauhan, Ashima Saikia, Talat Ahmad (2019; Oral).

TTG gneisses of the Aravalli Craton, India held at 14th JK Science Congress- Science and Technology for a Sustainable future during 20-22 December, 2019.

7. Hirelya Chauhan, Ashima Saikia, Talat Ahmad (2016; Oral).

Mineral Chemical and Geochemical constraints on the evolution of TTG gneisses of the Bundelkhand Craton, India held at "National Conference and field workshop on Precambrians of India, Jhansi, Nov.22-24, 2016".

8. Hireddy Chauhan, Ashima Saikia, Talat Ahmad, Tatiana Kaulina and Tamara Bayanova (2016; Oral).

TTG gneisses of the Aravalli Craton, India: Implications for the evolution and growth of the Northern Indian shield held at National Seminar on Geology, Geochemistry, Tectonics, Energy and Mineral Resources of North East India & Annual General Meeting of Indian Society of National Geochemists, Hyderabad Department of Geology, Nagaland University, Kohima Campus, Meriema, 2016, during 9th Nov-11th Nov. 2016.

9. Hireddy Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2014; Oral).

U-Pb zircon ages of TTG gneisses of the Aravalli Craton of India held at International Seminar, Magmatism, Tectonism and Mineralization (MTM-2014).

10. Hireddy Chauhan, Ashima Saikia, Tatiana Kaulina, Tamara Bayanova and Talat Ahmad (2013; Poster).

"Geochemical and geochronological constraints on the petrogenesis of the TTG gneisses of the Aravalli Craton of India" held at 3rd International Conference on Precambrian Continental Growth and Tectonism (PCGT-2013).

11. Hireddy Chauhan, Talat Ahmad and Ashima Saikia (2012; Oral).

Petrogenesis of the Archean TTG gneissic basement rocks of the Bundelkhand Craton of the Central India held at 99th Indian Science Congress, 2011-2012.

12. Hireddy Chauhan, Talat Ahmad, Dinesh Pandit, Avinash C. Pandey

Formation of Manganoan ilmenite in the Archean tonalite- trondhjemite-granodiorite (TTG) gneisses inferred from re-equilibration and opaque oxides: a case study from the Aravalli Craton, North Western India.

6th National Geo-Research Scholars Meet on Geosciences in Ladakh Himalaya.

13. **National Workshop on Geochronology.** Participated at the workshop at Inter University Accelerator Centre (IUAC), New Delhi.
14. **International conference on Climate change and Himalaya.** Participated in the inaugural day sessions of ICCCH at National Physical Laboratory, New Delhi.
15. National workshop on Isotopes in Earth, Ocean and Atmospheric sciences. Participated in the National workshop on Isotopes in Earth, Ocean and Atmospheric sciences at CSIR, NIO, Goa.
16. Symposium on Frontiers of Sciences (Present and future); Physical, Chemical and Earth Sciences. Participated in the Symposium on Frontiers of Sciences (Present and future); Physical, Chemical and Earth Sciences at Banaras Hindu University, Varanasi.
17. ISAS Webinar Series 2020. Indian Society of Analytical Scientist. Theme: Emerging technologies and Methodologies in Analytical Sciences. Participated in the Webinar Series.
18. DST-GATI Sponsored International Webinar. Emerging trends in Geosciences and its Social impact, ETGS-2022. Delivered a talk as a speaker during the 5 day International seminar.