

Resume of Dr R. Krishnamurthi, Professor of Economic Geology

Name : Dr. R. Krishnamurthi
Date of Birth : July 15, 1961.
Institution : Indian Institute of Technology, Roorkee
Academic Career:

Year	Degree/Position held	University/Institution
1977	S.S.L.C	Madras Board
1978	Pre-University	University of Madras
1982	B.Sc. (Applied Geology)	Anna University, Madras
1984	M.Sc. (Applied Geology)	I.I.T., Mumbai
1990	PhD (Economic Geology)	I.I.T., Mumbai

Professional Experience

1985-1988	JRF/SRF (DST Scheme)	I.I.T., Mumbai
1989	Research Associate (DST Scheme)	I.I.T., Mumbai
1990	Lecturer (Geology)	Vikram University, Ujjain
1995	Senior Lecturer	Vikram University, Ujjain
2002	Reader (Geology)	Vikram University, Ujjain
2003	Assistant Professor	I.I.T., Roorkee
2007	Associate Professor	I.I.T., Roorkee
2014	Professor	I.I.T., Roorkee

Award/Prize/Certificate won

- ❖ Visiting Fellowship for collaborative research work at IIT, Mumbai (2002-2003) by INSA, New Delhi.
- ❖ Young Scientist Award of the Madhya Pradesh Council of Science and Technology in Geology for Council of Science for the year 1991.
- ❖ National Rural Talented Scholarship for High School Level (1974-1977)

CONTRIBUTIONS TO TEACHING / RESEARCH

Teaching

I am teaching Economic Geology, Ore Microscopy, Mineral Exploration and Mineralogy to M.Sc/M.Tech students at Indian Institute of Technology, Roorkee from November, 2003. Two elective courses namely **Indian Mineral Deposits** and **Fluid Inclusions** are offered to M.Tech students of Geological Technology by me. I was teaching M.Sc., M.Sc. (Tech.) and M.Phil. programmes of Geology / Applied Geology at Ujjain University from 1990 to 2003. Economic Geology, Ore Microscopy, Mineralogy and Mineral Prospecting were the courses offered by me to Post-Graduate students. I introduced a special paper 'Thermodynamics in Geosciences' in M.Sc. (Geology) course of study in the University. New concepts of quantitative techniques of ore mineral identification were introduced in practical course. About 30 students completed M.Sc./ M.Sc. (Tech.) and M.Tech thesis under my supervision. I have been organizing field training programmes related to economic geology to students in different mineralized belts of Rajasthan, Central India and Karnataka for the past ten years.

Research

I carried out Ph.D. thesis on ***“Fluid inclusion characterization and wall-rock alteration studies of Kolar gold deposit, Peninsular India”*** at I.I.T., Mumbai (1985–1990) with financial support of a DST project. This work demonstrated the application of fluid inclusions to delineate high assay zones of gold in Champion Reef (Krishnamurthi et al., 1988, 1993) and has led to the recognition of physico–chemical parameters of ore forming fluids, pattern of mineral distribution and fluid–rock interaction during mineralization (Krishnamurthi, 1990, 1991). The work had also revealed the mode of gold transport and deposition at Kolar with respect to T, P, pH and dissolved complexes (Krishnamurthi et al., 1990, 1993 and 1996).

After joining Vikram University, Ujjain as a Lecturer, investigations were mainly focused on mineralogy, geochemistry, ore fluid characteristics and genetic aspects of select mineralized belts of M.P., Rajasthan and Orissa namely Sargipalli (Cu–Pb), Malanjkhanda (Cu–Mo), Dalli–Rajhara (Iron), Naro Hill (Bauxite), Sarguja / Betul (U) and Sewariya (W). The results of these studies were presented in National Symposia and published in journals (please see list of publications).

Two students were awarded Ph.D. under the supervision of the candidate (in 1998 and 1999) on Iron Formation of Durg, M.P. and Tungsten Mineralization in Sewariya of Rajasthan.

After joining I.I.T. Roorkee, I initiated research on genetic aspects of gold mineralization in Southern Granulite Terrain of Peninsular India. A Research Scholar under my supervision completed his Doctoral Thesis and awarded Ph.D titled ***“Genesis of Gold Mineralization in Attappadi, Southern Granulite Terrain, India”***. One more Research Scholar has completed the investigations on ***“Genesis of gold Mineralization in Wynad gold fields, Kerala”*** and submitted his Ph.D thesis in November, 2013. Results of these works have revealed the geological processes and stages of gold mineralization in a terrain that is different from the classical greenstone belts of India (Krishnamurthi et al., 2008, 2010, 2013, 2014 and Pruseth et al., 2011, Krishnamurthi, 2012, 2013,

Sahoo et al., 2015, 2016). I have initiated a research project funded by Department of Science and Technology, Government of India (43 Lakhs, 2010 to 2014) to work on gold metallogeny in Southern Granulite Terrain of India. ***A Fluid Inclusion Research Laboratory has been established by me with financial support from DST, Government of India for studies on mineral deposit genesis and its application to mineral exploration.***

COURSES DEVELOPED at I.I.T., ROORKEE

For M.Sc Applied Geology

- **Economic Geology**
- **Mineral Exploration**
- **Indian Mineral Deposits**

For M.Tech Integrated Geological & Geophysical Technology

- **Economic Mineral Deposits**
- **Mineralogy**
- **Indian Mineral Deposits**
- **Fluid Inclusions**

Specialist Courses/Invited Lectures

1. Resource person to deliver lectures(3) in DST advanced Training Programme on Mineral Deposit Modelling, 12-27 September, 2006 at University of Jammu, Jammu
2. Special Lectures(10) on "Aspects of ore geology and genesis of Mineral deposits with special reference to Indian occurrences", Dec.26-29, 2007 in the Department of Applied Geology, NIT, Raipur

3. Invited Lecture on "Space-Time selectivity of ore deposits with special reference to Karnataka and Rajasthan Cratons of India" 7-9 September, 2011 in International conference on Earth-Future, Periyar University, Salem, TamilNadu
4. Invited Lecture on "Current Understanding on the Genesis of Lode Gold Mineralization in the Southern Granulite Terrain, Peninsular India" National Seminar on Recent Advances and Future Challenges in Geochemistry and Geophysics: the Indian Scenario, 22-24 February, 2012, Banaras Hindu University, Varanasi
5. Key-note address on "What do we know about the genesis of gold mineralization in the Southern Granulite Terrain of Indian Peninsula?" 18th convention of Indian geological congress & International Symposium on Minerals and Mining in India, April 27-29, 2013 at Council of Science and Technology, Bhopal

List of Ph.D./M.Phil./M.Sc.(Tech.)/M.Sc/M.Tech. Thesis Supervised

Name of Student	Year of Award	Title
Ph.D. :		
H.S. Kale	1998	Ore mineralogy, Geochemistry and Genesis of a part of Dalli Rajhara Iron Ore Belt, Durg, M.P.
T.Prabhakar	1999	Fluid inclusion and mineralogical studies of Tungsten Mineralization associated with Sewariya granite of Rajasthan.
Pradeepkumar,T	2010	Genesis of gold mineralization in Attappadi, Southern Granulite Terrain, India.
Saju Vergheese	submitted in Nov 2013	Genesis of gold Mineralization in Wynad gold fields, Kerala
M.Phil. :		
R.K. Rathore	1991	Ore Mineralogy and Thermochemical aspects of Mahamaya Iron Ore deposit, Durg, M.P.
U.K. Tiwari	1992	Genetic aspects of Naro Hill bauxite desposit, Satna, M.P.

T. Prabhakar	1994	Ore mineralogy and genetic aspects of Malanjkhanda Copper deposit, Balaghat, M.P.
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M.Sc./ M.Sc. (Tech.)/M.Tech :

L. Alware	1991	Genetic aspects of Lead-Copper mineralization at Sargipalli, Orissa.
Y. Mishra	1992	Ore Mineralogical and Genetic aspects of Balaria sulfide deposit, Zawar mines, Rajasthan.
C.P. Bhoyar S.B. Kalaskar	1994	A study on Geology, Mineralization and Exploration of Uranium deposit at Jajawal, Sarguja Shear zone, M.P.
Neeraj Kumar	1995	Geology, Mineralization and Exploration aspects of Kaliapani chromite deposit, Sukinda Valley, Orissa.
A.N. Singh	1996	Geology and Geophysical aspects of Groundwater exploration around Ujjain, M.P.
A. Tiwari M. Makhwani	1997	Geology, Exploration and Beneficiation of Iron ores of Dalli - Rajhara, Durg, M.P.
Satyendra S.Sikarwar Rajeev Asthana	1998	Mineralization and Exploration aspects of Uranium in crystalline rocks of Betul Gneissic Complex, Central India.
Rajasekhar A.	1999	A study on exploration, exploitation and development techniques of Ankleshwar–Gandhar Oil Fields, Gujarat
V. Jagtap	1999	Geology, Exploration and Exploitation of Baroi Lead–Zinc Deposit, Udaipur, Rajasthan.
Y.Upadhyaya Prasad Pillai	2000 2000	Geology and Exploration aspects of Zinc–Copper Mineralization around Kherli Bazar in Betul belt of Madhya Pradesh.
Km.Varsha Datir S. Tikkekar	2001 2001	Geology, Exploration and Exploitation of a part of Bailadila Iron Ore Deposit, Chhattisgarh.

Priyanka Hazarika	2005	Sequence stratigraphic analysis of Raghavapuram Formation around Kaikalur- Lingala Field of Krishna- Godavari Basin
Moumita Dubey	2005	Structure, Tectonics and Sequence stratigraphic analysis of Narmada and Broach Block of Cambay basin
Anand, K.S.	2006	Genesis of Banded Iron Formations associated with supracrustal sequences of Attappadi valley, Kerala
Harikrishna, M.	2006	Study of kimberlites of a part of Wajrakarur diamond fields, Andhra Pradesh.
Sangeeth, G.	2007	Mineralogical studies of host rocks and quartz veins associated with gold mineralization in parts of Attappadi valley, Kerala.
Anjanjyoti Deka	2007	Study of Auriferous Banded Iron Formations of Attappadi Valley, Kerala
Banbihari Behra	2008	Mineralogical Studies of Auriferous quartz veins and host rocks of Wynad gold fields, Kerala
Ray, H.K.	2010	Petroleum Source Rock Evaluation of Argillaceous sediments in a part of Cauvery Basin.
Rajput, A.S.	2012	Geological setup of Ghisi-Jambara area, Betul district, Madhyapradesh
Behra, D.K.	2013	Fluid Inclusion characterization of auriferous quartz veins of Banspal Block, Keonjhar, Odisha
Sengupta, A.	2013	Genesis of gold mineralization in Keonjhar region of Eastern Indian shield

SPONSORED RESEARCH PROJECTS

- Fluid inclusion and ore mineralogical studies of Tungsten mineralization associated with Sewariya granite of Rajasthan – DST Project – No. SR/OY/A–11/94 for Rs.1,33,400/– (1995–1997) – Principal Investigator. (Completed).
- An integrated study of Evolutionary trends of the Dyke Swarms associated with Deccan Traps of Narmada Valley - UGC Project No. F.5.5/96 SR-I, Oct. 1996 for Rs. 3,00,000/- Co-Investigator. (Completed).
- Fluid inclusion characterization and mineralogical studies significant to Gold exploration around Sonadehi prospect, Bastar Craton – UGC Minor Research Project (2001). Sanctioned by University, Ujjain.
- Tungsten-Tin mineralization in Dudatoli-Almora Crystallines of Lesser Himalaya, Uttaranchal-Faculty Initiation Project funded by SRIC, I.I.T., Roorkee, Rs.60,000/- for the year 2004-2005 (Completed)
- Study of PGE and Au mineralization associated with Sukinda Chromite Deposit, Indo-Russian collaborative project by DST under ILTP -2007 to 2010(as a Co-PI), Rs. 9,00,000/-
- Lode gold mineralization in the Southern Granulite Terrain, Kerala: geochemical and petrological constraints on their genesis, DST-SERC, Rs.43,00,000/- 2010 to 2013 (PI)- In Progress

List of Publications

In Journals

Sahoo, A.K., **Krishnamurthi, R.** Ravikant,V., Pruseeth, K.L., Manju, N., Varghese. S and Pradeepkumar, T. 2015. Genetic aspects of gold mineralization in the Southern Granulite Terrain, India. Ore Geology Reviews, V. 72, P.1243-1262.

Sahoo, A.K., **Krishnamurthi, R.** and Varghese, S. 2015. Phase Separation of Ore Forming Fluid Related to Gold Mineralization in Wynad Gold field, Southern Granulite Terrain, India: Evidences from Fluid inclusion Studies. Journal Geology of Ore Deposits, V. 57, No.6, P.522-535.

Krishnamurthi, R. ,Ravikant,V., Pruseeth, K.L. and Varghese. S. 2014. The Nature – Evolution of Fluids and Genesis of Gold Mineralization in the Southern Granulite Terrain: Evidences from Petrological, Fluid inclusion and Geochemical Studies. Indian Mineralogist, V. 48, No.2, P.151-168

Krishnamurthi, R. 2013. What we do know about the Genesis of Gold Mineralization in the Southern Granulite Terrain of Indian Peninsula. Journal of Ind. Geol. Cong., V.5(Accepted)

Krishnamurthi, R. ,Ravikant,V., Pruseeth, K.L. and S. Varghese.2013. The Nature – Evolution of Fluids and Genesis of Gold Mineralization in the Southern Granulite Terrain: Evidences from Petrological, Fluid inclusion and Geochemical Studies. Indian Mineralogist, V. 47, No.2(Accepted)

Krishnamurthi, R. 2012. Current Understanding on the Genesis of Lode Gold Mineralization in the Southern Granulite Terrain, Peninsular India. Journal of Applied Geochemistry, V.14, No.4, P.370-382

Krishnamurthi, R. 2006. Tungsten mineralization associated with acid magmatism in Sewariya region of South Delhi Fold Belt, Rajasthan. Jour. Econ.Geol. and Resource Management, V.3, P.119-129.

Krishnamurthi, R. and Kale, H.S. 2003. Geochemistry and genesis of banded iron formation and associated ores of Mahamaya deposit Dalli–Rajhara range, Bastar craton, Central India. Vikram Science Journal, VXXVII, No.1&3, P. 27-35.

Billore, S.K., Sharma, N., Sharma, J.K., **Krishnamurthi, R.**, Kobayashi, T. and Yagi,R. 2000. Ujjain clay as low–cost sealant and liner for artificial ponding and bentonite alternative. Current Science, Vol.78, No.11, P. 1381–1383.

Kale, H.S. and **Krishnamurthi, R.** 1999. Ore mineralogical studies of banded iron formation of Mahamaya iron ore deposit, Durg district, M.P. Jour. Ultra Scientist, V. 11(2), P.196–199.

Krishnamurthi, R. and Sathe,P. 1994. Mineralogy and thermochemical aspects of

Rampura-Agucha sulfide deposit, Rajasthan. Bull. of Pure and App. Sci., V.13, P. 65-69.

Krishnamurthi, R. and Rathore, R.K. 1993. Ore mineralogy and mineral equilibria of Mahamaya iron ore deposit, Durg district, M.P. Jour. Ultra Scientist, V.5, No.2, P. 156-160.

Krishnamurthi, R., Alware, L. and Panchapakesan, V. 1993. Genetic aspects of Lead-Copper mineralization at Sargipalli, Orissa. Bull of Pure and App. Sci., V.12, P.35-40

In Edited Volumes (Books)

Pruseeth, K.L., Ravikant, V., Varghese, S. and **Krishnamurthi, R.** 2011. Mantle derived carbonate fluid alteration and gold mineralization in Southern Granulite Terrain, Wyanad. In Dyke Swarms: Keys for Geodynamic Interpretation (ed.), R.K. Srivastava, Springer-Verlag, Berlin Heidelberg P.125-139.

Krishnamurthi, R., Sen, A.K., Pradeepkumar, T. and Sharma, R. 2010. Gold mineralization in the southern Granulite Terrain of India. In Gold Metallogeny: India and Beyond (ed.), M. Deb and R.J. Goldfarb, New Delhi, Narosa Publishing House, P. 222-233.

Krishnamurthi, R. and Prabhakar, T. 2000. The nature, fluid characteristics and genesis of tungsten mineralization in Rajasthan : A brief review. In crustal evolution and metallogeny in the north western India shield (ed.), M. Deb, New Delhi, Narosa Publishing House, P. 417-429.

In Conferences (Proceedings & Abstracts)

Krishnamurthi, R. 2011. Space-Time selectivity of ore deposits with special reference to Karnataka and Rajasthan Cratons of India. International conference on Earth Future, Salem, P.34-36.

Krishnamurthi, R. and Pradeepkumar, T. 2011. Gold Mineralization in the Southern Granulite Terrain, Peninsular India. National seminar on Recent Advances in Mineral Sciences and their Applications, Mysore, P.49-51.

Pradeepkumar, T., **Krishnamurthi, R.**, Sharma, R. and Sen, A.K. 2008. Genesis of gold mineralization in Attappadi area, Southern Granulite terrain, Kerala. Pre-Workshop Volume, International Field Workshop on Gold Metallogeny in India, Hyderabad, P.110-113.

Krishnamurthi, R. Pradeepkumar, T., Sharma, R. and Sen, A.K. 2008. The Nature-Evolution of fluids and mechanism of gold deposition in Attappadi, Southern Granulite terrain, India: Evidences from fluid inclusion studies. Proc. Of Second Meeting of Asian Current research on fluid Inclusions, Kharagpur, P. 89-91.

- Pradeepkumar,T.,**Krishnamurthi, R.**,Sharma,R. and Sen,A.K.2006. Fluid inclusion study of gold mineralization along Bhavani shear Zone, Attappadi valley, South India. National seminar on Active and Fossil Suture Zones, Dehradun, P.110-111.
- Pradeepkumar,T., Saritha,S., **Krishnamurthi,R.**, Sen, A.K. and Nair, R.V.G. 2006. Shear zone hosted sulfide and gold mineralization in Attappadi Valley, Kerala. National Conference on Fossil Fuel and Mineral Resources, Dhanbad, P.37.
- Krishnamurthi, R.** and Prabhakar, T.2004. Tungsten mineralization in Sewariya granite of South Delhi Fold Belt, Northwestern Indian Shield. Spec. Publ.No.72, Geol. Surv. Ind., P. 449-454.
- Krishnamurthi, R.** 2004. Fluid characteristics and genesis of Tungsten mineralization associated with Sewariya granite of Rajasthan, Northwestern Indian shield. National Seminar on Role of Fluids in Crustal Evolution, Dehradun. P. 26-27.
- Krishnamurthi,R.** Tripathi, U.N. and Agrawal, V. 2002. Fluoride contamination in ground Water of Jhabua region, Madhya Pradesh. National Seminar on Environmental Pollution. Ujjain, P.124.
- Krishnamurthi,R.** and Prabhakar,T. 2001. Tungsten mineralization in Sewariya granite of South Delhi fold belt, North Western Indian Shield. National Seminar on Mineral Exploration and Resource Survey of Base Metals, Strategic Minerals and Rare Earths, Jaipur, P. 122-123.
- Krishnamurthi, R.**, Prabhakar, T. and Panchpakesan, V. 2000. Mineralogy, fluid characteristics and genesis of tungsten mineralization associated with Sewariya granite of South Delhi fold belt, Rajasthan. XII Ind. Geol. Cong. Udaipur, P. 39-41.
- Krishnamurthi,R.** 1999. Fluid inclusion and wall rock alteration studies of tungsten mineralization associated with Sewariya granite of Rajasthan. Proc. 89th Ind. Sci. Cong., Part III, Chennai, P1-2.
- Krishnamurthi, R.**, Prabhakar,T. and Panchapakesan, V. 1997. Tungsten mineralization associated with Sewariya granite of central Rajasthan - Mineralogical and thermometric approach. ICABIF VOL. Raipur, p.27.
- Panchapakesan,V., Pandalai, H.S., Srivastava, R.K. and **Krishnamurthi,R.** 1996. A note on fluid inclusion in mesothermal gold deposits of Archean greenstone belts. National Workshop on Explor. & Exploi. of Gold in India, Hyderabad, P. 274-280.
- Krishnamurthi, R.** and Tiwari, U.K. 1996. Mineralogy and geochemical aspects of Naro Hill Bauxite Deposit, Satna district, M.P. Proc. 83rd Ind. Sci. Cong., Part III, Patiala, P. 12-13.
- Krishnamurthi, R.**, Panchapakesan, V. and Sahu, K.C. 1993. Fluid inclusions as indicators of nature of ore fluids, deposition and high assay zones at Kolar Gold Fields, Karnataka. IX Con. of Ind. Geol. Cong., Thanjavur, P. 59.

- Krishnamurthi, R.** and Alware, L. 1992. Fluid inclusion characterisation and genetic aspects of Sargipalli sulfide deposit, Orissa. Proc. 79th Ind. Sci. Cong. Baroda, Part IV, P.60.
- Krishnamurthi, R.** 1991. Fluid inclusion characterization and wall rock alteration studies of Kolar Gold deposit, Karnataka, VI. M.P. Young Scientist's Congress, Raipur, P. 101-102.
- Krishnamurthi, R.,** Panchapakesan, V. and Sahu, K.C. 1989. Gold mineralization in Champion reef and Oriental lode in Kolar greenstone belt, Peninsular India. Proc. Int. Symp., on Gold Geology and Explor., Shenyang, China.
- Krishnamurthi, R.,** Panchapakesan, V. and Sahu, K.C. 1988. A study of correlation between fluid inclusion parameters and assay values in Kolar Gold deposit, Karnataka, India. Proc. Second Mining Symp., Kerman, Iran, P. 126-140.
- Krishnamurthi, R.** and Sahu, K.C. 1987. Formation of magnesite in Chalk Hills, Salem, Tamil Nadu. Proc. VI. Ind. Geol. Cong., Roorkee, P. 59-61.