

Curriculum Vitae

Personal Data:

Santha Ram Adibhatla PhD

Birth Date: 4th January 1950, Indian

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Education:

Ph.D. Mining Engineering, Department of Mining Engineering, Viswesvaraya National Institute of Technology, (VNIT), Nagpur, India. (2010).

Title of Ph.D. thesis: *Slope Design Guidelines for Friable Ore Bodies (Mining Rock Mechanics)* Department of Mining Engineering.

M.Sc.(Tech.) (1974), Applied Geology, College of Science and Technology, Andhra University, Visakhapatnam, (A.P.) India.

Title of Dissertation: *Mining Geology and deep underground Mining Methods at Kolar Gold Fields, with reference to gold mineralization, Kolar Gold Fields, Karnataka, India.*

Credentials:

- Senior Professional Engineer,(Sr.PE) Engineering Council of India, New Delhi, India
- Life Member, Mining Engineers Association of India (MEAI) Hyderabad, India.
- Member, Association of Geoscientists for International Development (AGID) SaoPaulo, Brazil.
- Liaison Officer for Mining Sector in India for AGID, Sao Paulo, Brazil
- Advisory Member, International Mining History Conference, Exeter, (UK)
- Served as Expert Member, Rock mechanics, Ministry of Mines, New Delhi.
- External Expert, Department of Mining Engineering, Indian Institute of Technology, Kharagpur
- Certified Recognized Qualified Person (RQP) by Indian Bureau of Mines, for the preparation of geological and Mining Plans including Environmental plans to meet the statutory requirements of Indian Bureau of Mines and State Mines and Geology Departments

Languages:

English - Good writing and communication skills and strategic thinking skills. Proficiency in major Indian languages.

Professional Experience:

Multicultural work experience in different areas of geology, geo-technology, mining and Environmental aspects, spanning over 45 years. Major contributions with the mining industry, Central Government service mostly involved with mining research consultancy projects, and teaching positions after retirement.

- Retired from Indian Bureau of Mines in 2010, Ministry of Mines, and Government of India- **Regional Mining Geologist (Technical Consultancy and Mining Research Division)** Possess over 38 years of practical geological field experience in Mineral Resource development, Sustainable, environmental and eco-friendly resource development. Responsible for conservation, scientific and systematic development of different types of mineral deposits in India and abroad. Actively involved with need based industry sponsored projects.
- Field experience include geological/ geo-technical investigations, exploration of different types of mineral deposits, Ore deposit evaluation, numerical modeling, National Mineral inventory data base management system for quality and quantitative assessment, mine planning, development, production scheduling, preparation of Environmental Management Plan (EMP), including mine closure plans. Worked extensively on projects related to strata control problems in opencast and underground mining, tunneling, tailings impoundment design, waste dump stability assessment and related geo-technical problems.

Employment History: Professional Positions held

Regional Mining Geologist: (2007-2010): Technical Consultancy Division, Mining Research Cell, Indian Bureau of Mines, Nagpur.INDIA

- Job responsibilities include overall supervision, project formulation for different types of mining consultancy and research projects on strata mechanics, ground control, Feasibility studies, open cast and underground mine design and planning, slope stability investigations, underground rock mechanics investigations including strata condition monitoring, with due safety and environmental considerations. Providing necessary field guidance to junior officers, preparation and presentation of technical proposals for project funding, performance evaluation and implementation. Most of these projects are funded by the mining companies.

Senior Mining Geologist: (1988 – 2007), Indian Bureau of Mines, Nagpur

- Responsible for taking up Mining Geology and Geo-technical and mining projects. Preparation of feasibility project studies for mineral based industries. Evaluation of proposals from scientific departments/organizations. Providing logistic support, project scheduling and implementation. From 1988 till 2010, completed over 30 consultancy projects on slope stability on Iron ore, Limestone, Chromite, Wollastonite, Manganese, Perlite, Soapstone, and underground rock mechanics investigations on Lead-Zinc, Copper and Gold mines. All these projects are funded by the mining companies.

Significant projects completed and the Report of Investigations are available with Indian Bureau of Mines Some important Reports are

- Design and construction monitoring of 3nos. of large transportation tunnels in environmentally fragile Himalayan terrain. M/s. Ambuja Cement.
- Development of underground stoping methods below the Tista river, strata control and ground monitoring for development of “Cut and fill mining” methods for mining copper ore bodies below the river. M/s. Sikkim Mining Corporation.
- Design of optimum stoping parameters for a perlite mine using numerical modeling techniques, Gujarat.
- Rock mass strength characterization and design for large open cast chromite mines. For Balasore Alloys Limited, Orissa Mining Corporation and Tata Steel chromite mines.
- Development of stoping methods for soapstone Mines of M/s. Associated Soapstone Pvt.Ltd, Udaipur.
- Design of tailings dam for Iron ore mining project in Goa. Sodedad Industrial Fomento Limitada, Goa. Ferro-Met, Goa.
- Design of stoping method for Bangur underground chromite mine in Orissa. Orissa Mining Corporation Ltd.
- Slope stability and mine planning for ecologically fragile limestone mine, La Farge, Meghalaya and Keshlog Mine, Ambuja Cement.
- Waste dump design, stability analysis for Bachelu Iron ore mines, NMDCLtd.,
- Geotechnical investigations for stope design for Askot base metal mine, Uttarakhand, M/s. Pebble Creek Pvt Ltd, Vancouver, BC, Canada.
- Techno-economic feasibility for Uti Gold deposit, Hutti Gold Mines Pvt Ltd, Karnataka, using strata control considerations.

Mine Environment and Waste Recoveries Project:

Deputed by the Indian Bureau of Mines, Ministry of Mines to **BRGM, Orleans, (France) on a joint** project on “*Application of Development Techniques in Mine Environment and Waste Recoveries*” and responsible for generating geo-technical field

data inputs for a cluster of Iron ore mines in Goa region and Chromite mines of Sukinda, Orissa, India for the preparation of Regional Environmental Assessment(REA), Environmental Impact Assessment (EIA) and Environmental Management Project (EMP)reports. .

Senior Geologist:

Hindustan Zinc Limited, (now, Vedanta Resources plc. ltd), Udaipur, Rajasthan, India. Zawar Group of Mines (1977-1988):

Responsible for conducting site investigations for three large underground lead–zinc mines. Major job responsibilities include geo-technical mapping of underground development in highly stressed environment. Underground exploration, delineation of ore bodies based on exploration data. Design of underground stoping methods, grade control, mine planning and related environmental aspects.

Associated with **M/s Golder Associates, Geotechnical Engineers UK**, for 3 years on computation of numerical stress analysis and monitoring of deep underground strata conditions at Zawar Group of Mines, Rajasthan in order to recover the ore some of the highly stressed pillars prior to their failure and to develop a new mining method for the remaining reserves.

Probationer Engineer (Geology), (1975-77) Hindustan Zinc Limited (now Vedanta Resources Plc), Maton Rock Phosphate Mine, Udaipur District, Rajasthan, India. Worked with opencast Rock Phosphate Mine and Phosphate mineral processing plant. Job Responsibility includes geological mapping, exploratory drilling, reserve estimation, quality control.

Government of India Deputation (Training)

- Deputed by Indian Bureau of Mines (IBM) to BRGM, France on “*Geo-technical Engineering and Environmental Management*” training program at Orleans, France (1997)
- Deputed by IBM to BRGM, France “*Ground Water Modeling*” training program at Orleans, France (1999)
- Deputed by IBM on “*Remote Sensing and its applications in Environment*” from National Remote Sensing Agency, Hyderabad, India (1996)

Professional Training related to Work Experience:

As a part of human resource development at IBM,

- Trained delegation of Mining Engineers from Planning and Investment Department, Government of Vietnam on “*Rock Slope Engineering*” (1997)

- Conducted a National level executive development programme on "*Rock Slope engineering and Its Applications in Open pit mining*" as Course Co-Coordinator, at Department of Mining Engineering: University of Jodhpur, Rajasthan.
- Delivered invited Lectures and short courses on Rock Engineering at Department of Mining Engineering, Indian Institute of Technology, Kharagpur, BHUIT, Varanasi, National Institute of Technology, Rourkela, GIET, Rajahmundry and at several academic and national research institutions.
- Trained a group of senior mining officers from the Department of Mines and Energy, Republic of Tanzania.

Research Publications

- Published 65 technical papers in national/ international seminars / conferences / symposia / journals. (List of papers attached)

Books / Bulletins Published:

- “Lead-Zinc Mining in Rajasthan, India”, Publications Division, Indian Bureau of Mines Government of India, Nagpur. (1990)
- Application of Computers and Information Technology in Indian Non Coal Mines” Publications Division, Indian Bureau of Mines, Government of India, Nagpur(2004)
- Application of Rock Mechanics in opencast and underground mines Publications Division, Indian Bureau of Mines, Ministry of Mines (2014)
www.ibm.gov.in
- Foot Prints of Gold Mining Heritage in India (2018) (In press)

From 2010 till date:

- Rendered consultancy services to need based mining and construction industries in India, Mauritania, Oman, Nigeria and Ghana.
- At the request of the university/Academic Institutions served as adjunct professor/and Honorary Professor.
- Engaged with several consultancy projects related to open cost mining, railroad tunnels projects along with teaching in graduate students in Applied Geology
- Independent Geology, Geotechnical and Mining Consultant.

- Geotechnical and Mining Consultant: GAT Mining Limited, Accra, Ghana: www.gatmining.com.

Teaching Experience:

- Honorary Visiting Professor, Andhra University, Visakhapatnam, India.
- Adjunct Professor of Civil Engineering, Department of Civil Engineering, ANITS, (affiliated to Andhra University), Visakhapatnam for teaching and guiding research work for M.Tech students.
- Courses taught: Engineering geology, Surveying, Geo-technical Engineering, Numerical methods in Geotechnical engineering, Environmental Engineering and Water Resources Management.
- Department of Geology, Andhra University, Visakhapatnam, India for MS students in Applied Geology.

Subjects: *Geological engineering, Economic geology, Mining Geology, Soil Mechanics. Assisted in formulating Field training camp.*

External examiner, Geology Department, Andhra University, for conducting Practical and Viva-voice from time to time.

- **Visiting Faculty**, Department of Geology, Adikavi Nannayya University, Rajahmundry, Taught MS students in Engineering Geology.

Subjects: Engineering Geology, Mineral Economics, Elements of Geochemistry, Petrology and Lab work, Geological Field training camp

- Part-time Guest lecturers with Geo-Engineering Department, Andhra University, and guest lectures and conducting geological tours/ lectures.

Academic Service

- Served as Chairman for the Technical Session : *International Work shop : New Frontiers in Reclamation (2001): Milos Conference: Milos Island: Greece*
- Served as Co-chairman for the Technical session: *International Conference on Sustainable Development (2002) : Milos Conference, Milos Island: Greece*
- Supervised Ph.D. thesis on “*Effect of Blasting on Fragmentation in Iron Ore Mines, Goa,*” Department of Mining Engineering, IIT, Banaras Hindu University, (BHUIT), Varanasi.
- Organised International Conference on “*Ancient Mining History and Heritage*”

in association with IMHC, London, UK, NMHA, USA and SGAT, Bhubaneswar India. (2005)

- Listed among the "*2000 OUTSTANDING SCHOLARS OF THE 21st CENTURY*" by the *International Biographic Centre, Cambridge, England* for the outstanding contribution in the field of Geo-technical and Rock Mechanics Engineering: (Mining Engineering Discipline)
- Served as Guest faculty on Small Scale Mining Practices in India to a group of official delegates from Ministry of Mines and Energy, Tanzania (2014)
- Acted as Member, Board of Studies (BOS) for Mining Engineering Discipline, Jawaharlal Technological University, Kakinada, and Andhra Pradesh, India.
- Member, Editorial Board "Global Journal of Earth and Engineering Sciences", USA.

Consultancy Projects Completed: (2010-2019)

- Slope stability Investigation and stability analysis of Ameri Lead-Zinc Mine, Nigeria (*In Progress*)
- Slope stability investigations for Sai baba Manganese Mine, M/s. Sarawagi&Co. Pvt. Limited, Vizianagaram District. (*in progress*)
- Geotechnical investigations for the construction of Railway tunnels, cut slopes from Rishikesh to Karna Prayag, Uttarakhand for Rail Vikas Nigam (Indian Railways)
- Geotechnical investigations for slope stability assessment of an Iron ore and Manganese Mine, South Goa
- Geotechnical investigations for the slope stability assessment of Kashlog Limestone mines, LaFarge-Holcim Ambuja Mines, Darlaghat, Himachal Pradesh
- Geotechnical Investigations for mine design, slope stability investigations and production planning of Taldih Iron ore Mines, Barsua, Orissa M/s. Steel Authority of India (SAIL) and Metchem, Quebec, Canada. (2011)
- Technical expertise and prepared Report on Gurlabett Leubda Magnetite/ Iron ore Project, Akjoujt, Sahara Desert, Mauritania, for M/s. Curve Cap Ventures Ltd, U.K.
- Rendered expertise on exploration, mine development for Manganese and Chromite deposits in Oman for M/s. Northern Minerals, Muscat, Sultanate of Oman,

- Consultant for Mine Planning, development, equipment selection and phasing of mining operations, for Gabbro project in Oman for a production capacity of 5.0 million tons per year to 10 million tons per year. Client: ONIDCO M/s .Frost and Sullivan Consulting, London, UK. (2013)
- Grinding and Crushing Mills performance study for Hindustan Unilever Limited, (Unilever UK, Plc.) and CRISIL, New Delhi, India (2014)
- Developed a novel method of dewatering the tailings slimes using polymer injection method for water recovery for Heavy Mineral Beach Sand Process Plant, M/s. Trimex Sands Pvt. Ltd, India. (2013-2014): Mineral Processing Project.
- Geo-technical investigation for slope stability assessment of limestone mine up to 150m depth of M/s. Ambuja Cement, (Holcim Group) Chandrapur, India.(2017)
- Development of a novel method of eco-friendly mining using expansive cement mortars for iron ore production, by eliminating production blasts.M/s. Hira Group, Chhattisgarh, India.(2016)
- Geotechnical investigations for the constructions of 204 Km railroad alignment in Gharwal Himalayas in Uttharakhand, Ministry of Railways (Package-1, Package-5 and Package-6) (2017-2019)
- Geotechnical investigations for slop stability assessment of a Manganese mine M/s. Sarawagi &Co. Pvt.Ltd. (2019)
- Geotechnical investigations for slope stability assessment of Paraswani Limestone mine, M/s. Ultratech Cement Ltd. Chattisgarh, (2019).
- Geotechnical Investigations at Bridges, Tunnels and other specified locations on the Railway Alignment in connection with construction of 63.10 Km Bhanupali-Bilaspur- Beri new Broad Gauge Rail Link in the State of Panjab and Himachal pradesh, India, (Package-2) from Km 41.033 (Kot) to Km 62.492 (Barmana), India..