

Profile in brief

DR. AUTAR K RAINA

Chief Scientist @CSIR-CIMFR & Professor @ AcSIR

Ph.D. Mining Engg. (IIT-ISM) & Ph.D. (Earth Sciences)

Gold Medalist, National Mineral Awardee (Mining Technology) MoM-Gol

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Vidwan ID: 17164;
Orcid: 0000-0001-8191-0134; **Scopus:** 7101757583;
Researcher: C-3666-2009; **Microsoft Academic:** avtarkRaina; **Google Scholar:** <https://scholar.google.co.in/citations?hl=en&user=KTr0TEsAAAAJ>

1. Research Areas:

- ENVIRONMENTAL IMPACTS OF BLASTING in Surface Mines, Railways, Hydropower Projects, Metros
- Information technology in mining and packages for mining – FRAGALYST 4.X, 6.0
- Engineering geology – Created CMRI_Rock software for Rock Classification
- Rock excavation engineering [Major R&D Project on TBM/Roadheader by CPRI COMPLETED]
- ReMi, MASW, ANN, RSA, General & advanced Statistical techniques for excavation Engineering

2. Area of Specialization:

ENVIRONMENTAL IMPACTS OF BLASTING, ROCK EXCAVATION ENGINEERING, IT IN MINING

3. Research Publications: +157 International and National, SCI, Scopus, Refereed Conf.

4. Major Honours/Awards received:

- Member, **Academic and Research Advisory Panel**, University of Ladakh, Leh (2020-22)
- Member Board of Studies** in Geology, RTMN University, Nagpur (2019-2021); RKNEC (Civil Engg. 2022-23)
- Member Fondecyt - Chile**
- NATIONAL GEOSCIENCE (Mineral) AWARD** 2008; citation, certificate and a cash prize, MoM, GOI
- Commendation by Secretary, National Disaster Management Authority**, Ministry of Home Affairs, Govt. of India for Clearance of the blockage on River Phuktal, Zaskar J&K during Feb.-March, 2015.
- SRG Information Technology Award** - Gold Medal and Merit Certificate, 2007, Mining Engineers Association of India
- DN Thakur Award** – Citation and Medal for outstanding contributions in earth sciences
- Certificate of Merit – Leadership Development Program** 0902 HRDC CSIR 2009
- Certificate of Merit – Institution of Engineers India** for Paper published in JIEI, 2007
- Dr. P. N. Bose Award** for Geological Sciences and its application in Mining, the IME Journal Annual Awards Function, 21-22 June, New Delhi, 2014.
- Gold Medalist** in PG and **N. Dasrathi Gold Medal** for 1st Position in PG
- Received a citation and Rs. 5000/- excellent R&D contribution in a project on pilot shaft excavation by raise driving technique.

5. Projects completed

- Major Grant-in-Aid; Collaborative: **17**
- In house as PI/Co-PI: **09**
- Industrial Sponsored/Consultancy (PI/Coordinator): **+81**

6. Professional Affiliations: 11 National and International Organisations

7. Number of Books: (a) Authored/Edited: 1 (in press Taylor and Francis) +6; (b) Chapters in books: 9

8. Number of Patents/Copyrights granted/applied for

- Patents: **5** (b) Copyrights: **2+2 (filed)** – [Fragalyst- 11 pages on www & 10 on Google Scholar] IPR
Forex Savings: through Aatmnirbhar Bharat and License exports.

9. Dissertations supervised

- Ph.D.** Awarded **2**; Submitted **2**; Under supervision: **2**
- Post-Graduation** +**10**
- Graduation** + **24**

10. Significant Achievements

- Major R&D National Perspective Plan Project (around 2.82 Crores) from CPRI-MoP (Gol).
- Major Sponsored Project of National Importance (around 4.7 Crores) granted by MRVC, Suburban railway
- Fragalyst** [Indigenous Fragmentation analysis software] for blasting created and propagated – around 35 licenses in market. Saved on Forex. **Fragalyst 6** released.
- Unique rock testing/cutting facility at CSIR-CIMFR & IIT(ISM) creation**
- Saved **11 Crores** to APGENCO using controlled blasting method
- Excavated a **150 m tunnel @ 15 m** from a 100-year-old tunnel in Mumbai for MRVC
- Excavation methodology near working rail line/station in Mumbai (Railways)
- Excavation of a new tunnel near a 100+ year old tunnel in Mumbai (Railways)
- Several **DPRs** prepared for Mining and Railways including Mine Expansion Planning.
- Risk criterion** for flyrock from blasting
- Raise driving** of 122 m in Ghatghar Project – first of its kind in India.
- Blasting near critical and historical constructions including Societal Mission Projects.
- Permissions** from DGMS even up to **50 m for blast face**

11. Professionals trained: Around 60 [Absorbed by Industry] & continuing