

Bio-Data of Dr A.K. Soni

1. Name: **(Dr) ABHAY KUMAR SONI**

2. Date of Birth: **22.05.1963**

3. Current Position and Address: Chief Scientist and Scientist-in-charge
(with E-mail & Phone no.) CSIR-CIMFR Nagpur Regional Centre
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4. **Educational** qualifications: **B.E. (Mining), M.S. (S&T), Ph.D.**

S. No.	Degree / Certificate	Year of Passing	Name of University / Institute	Subjects
1.	B.E.(Mining) (Bachelor's Degree)	1983	Ravishankar University, Raipur, (Chhattisgarh) / National Institute of Technology (NIT), Raipur	Mining Engineering
2.	M.S. (S&T) (Post Graduation)	1991	Birla Institute of Technology & Science (BITS), Pilani (Rajasthan)	All subjects of Science & Technology discipline
3.	Ph.D.	1998	Indian School of Mines, Dhanbad	Environment Science and Engineering

* *Ph.D. Thesis topic - "Integrated Strategy for Development and Exploitation of Natural Mineral Resources of the Ecologically Fragile Area"; Nov,1993 to Dec,1998)*

5. Work experience : **More than 30 years (In Research / Teaching /Production / Field)**

Designation	Name of company/ Organization / Institute	From	To	Nature of work
(i) Junior Mining Engineer	Coal India Limited (at SECL Subsidiary)	16/11/83	25/01/86	Production planning and control of a shift as shift head
(ii) Lecturer (Mining)	Government Engineering College, Raipur(Chhattisgarh) (Now NIT, Raipur)	29/07/86	05/10/87	Teaching and Research
(iii) Scientist	Central Institute of Mining and Fuel Research (CIMFR) Dhanbad, India	09/10/87	08/10/201 3	Research in mining and mine environment
(iv) Chief Scientist	Present Position in CIMFR Scientist 'G', Group IV (6)	09/10/2013	Till to date	Research & Administration

6. Area of specialization: **Mining Environment**

- Geo-hydrological problems of mines
- Environmental management in Fragile /Sensitive areas with particular reference to mining and hill type areas.
- Sub-surface sciences like tunneling, cavern excavation etc.
- Mining and environmental legislation and policy issues

7. Honors/Awards received:

- (i) **Chaired and Co-chaired technical sessions** during various technical events i.e. conferences (national /international),workshop, symposium etc.
- (ii) **Invited as Key-note speaker** in Seminar and Conferences.
- (iii) **Invited as external examiner** by the Department of Mining Engineering, Government Engineering College, Raipur and University of Roorkee (UOR, now IIT), Roorkee.
- (iv) **Member of Bureau of Indian Standard (BIS) committee** – Hill Area Development Engineering Sectional Committee - CED 56.
- (v) **Executive Member-Mining, Chemical, Metallurgy and Material Sciences Engineering Division (2000 – 2002)**, Institution of Engineers (India), Roorkee Local Centre.
- (vi) Received Best Paper **Award** from Indian Geotechnical Society (IGS) on the Paper entitled” Effect of Repeated Cooling on Fracture Toughness of Rock”, IGS –HEICO Award - 2003.
- (vii) **Member, Committee on Revision of Curriculum** for Diploma in Mining and Mine Surveying, Maharashtra State Board of Technical Education, Mumbai.
- (viii) Best Symposium Paper **Award, 2005** [Geominetech Symposium on New Equipment, New Technology, Management and Safety in Mines and Mineral Based Industries (ENTMS), Bhubaneshwar].
- (ix) Received Best Citizen **Award, 2006** for development of an Environmental Degradation Index (EDI) for application in fragile areas from *International Publishing House*.
- (x) **Member, International Advisory Board** for Journal of Mine Water and Environment, Published by Springer Verlag.
- (xi) **Appointed invigilator** and paper setter by Rashtrasant Tukdoji Maharaj Nagpur University (RTMNU), Nagpur.
- (xii) **Member, assessment committee and screening Committee** for NEERI Nagpur and member, Screening Committee, AcSIR for NEERI Nagpur.
- (xiii) **Member, Advisory Committee** and National Organizing Committee for national seminar and conferences.
- (xiv) **Appointed as ‘Evaluator’** by IIT, Roorkee for National Award committee.
- (xv) **Guest of Honor** for Technical Workshop on 'Advancement in Mining industry' Government Polytechnic ,Sadar, Nagpur (05/11/2015)
- (xvi) Received **ISRMTT Best Paper Award – 2013** from Indian Society of Rock Mechanics and Tunneling Technology (ISRMTT) on the Paper entitled” Boulder Characterization and stabilization at Ajanta Caves’ (Received jointly with Dr MN Bagde, Senior Scientist).
- (xvii) **Reviewer** of Technical Papers for International Journals (Journal of Mine Water and Environment ; Journal of Geography, Environment & Earth Sciences International (Science Domain, International); Journal of Water Resource and Protection, Scientific Research Publishing, USA).
- (xviii) **Appointed as ‘Expert Member - ENVIS Evaluation Committee** by the Ministry of Environment, Forest and Climate Change , New Delhi (16 - 17th Feb, 2015).
- (xix) **Selected and appointed as ‘Expert Member /Advisor’** by UPSC , New Delhi.

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8. Fellowships/Scholarships:

- Awarded William Greenwood Scholarship from Association of Geo-scientists for International Development, University of Sao Paulo, Brazil for Ph. D. Work.

9. No. of Research Publications:

- Papers in journals: 35
- In conference proceedings: 52
- Invited/key-note addresses: About 15 lectures.
- List of best 05 publications:

2010 Beyond

1. **A. K. Soni**, L.K. Sahoo, U.K. Ghosh and M.V. Khond (2015), Importance of Radius of Influence and its Estimation in a Limestone Quarry , Journal of Institution of Engineers (India) - Series D, Vol. 96 Issue 01, April, pp. 77-83 (DOI: 10.1007/s40033-014-0059-z).
 2. **A K Soni** and Christian Wolkersdorfer (2015) , Mine water: Policy perspective for improving water management in the mining environment with respect to developing economies, International Journal of Mining, Reclamation and Environment, Taylor & Francis, Vol. 30. Issue 2, pp 115-127. DOI : 10.1080/17480930.2015.1011372. (Impact Factor 2014 = 0.562).
 3. **A.K. Soni**, B Mishra and S. Singh (2014), Pit lakes as an end use of mining: A review, Journal of Mining and Environment, Iran, ISSN 2251-8592, Vol. 05. No. 2, pp 99-111. (**Impact Factor 2013= 0.071**)
 4. Paras R. Pujari, **Abhay Soni**, C. Padmakar, Piyush Mahore, Ramya Sanam and P. Labhasetwar (2013), Ground penetrating radar (GPR) study to detect seepage pathways in the Ajanta Caves in India, Bulletin of Engineering Geology and Environment (An International Journal from Springer), Vol. 73 No. 01, pp. 61 -75 (First Published Online- 17th November ; DOI 10.1007/s10064-013-0504-5), (**Impact Factor 2013=0.721**)
 5. **Soni A.K.** and Pujari P. R. (2012), Sea -Water Intrusion Studies For Coastal Aquifers: Some Points To Ponder, *Open Hydrology Journal* (OHYDJ), Bentham Science Publication , USA, Vol. 06 ; pp. 24-30, DOI: 10.2174/1874378101206010024.
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10. Number of Books authored/edited: One / One

- i. MINING IN HIMALAYA - AN INTEGRATED STRATEGY, CRC Press ,Taylor & Francis, 2015-16 (Under Print)
- ii. MINING AND ENVIRONMENT - Authored by BB DHAR and published by A.P.H. Publishing Corporation, New Delhi [Contributed for draft preparation, editing and proof reading]

11. (a) No. of Patents granted/applied for: Nil

(b) Technologies developed, Licensed and/or commercialized: PI see point No. 15 for details

12. Foreign visits: Visited USA and UK in connection with research work

13. Details of Professional memberships:

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| * Institution of Engineers (India) | : Fellow - (F- 017184 -7) |
| * Mining Engineers Association of India (MEAI) | : LM -1266 (NAG) |

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(Previously 'Himalayan Chapter' and now 'Nagpur Chapter')

* International Mine Water Association	:	IMWA- 638
* ISRM ,India Institutional Member	:	2009 onward
* Indian Geotechnical Society (IGS)	:	M -3140
* Mining, Geological & Metallurgical Institute of India (MGMI)	:	AM - 4853
* Association of Geo-Scientist for International Development (AGID)	:	Member since 1996
* Indian Society for Rock Mechanics & Tunnelling Technology (ISRMTT)	:	LM -332
* Indian Geological Congress	:	Life member

14 . Major contributions:

My major contributions include R&D work in a relatively new and untouched area of 'Himalayan Mining' and 'Geo-hydrological problems of Mines' which includes 'ground water problem of mines' currently given much attention in India in view of water scarcity problem. Some significant and notable contributions can be listed as follows –

1. Ground water (G/W) lowering assessment for open pit mines.
2. Estimation of seepage into mine pit located near river or near water body.
3. Quantitative estimation of the 'Mine Water'.
4. Behavior of aquifers in coastal mining areas (Confined Aquifers).
5. Development of 'Industry Specific Standards' for limestone mining in India.
6. Development of 'Value Added Products from Mining Waste'.
7. Improvement in cost economics of ANFO explosives for rock blasting and with respect to Indian mines.
8. Preparation of 'Upper Catchment Area Treatment (CAT) Plan' for mine and adjacent to river.

As scientist in the field of *mining and mine environment (broad subject area)* contributed technically as Project leader / Principle Investigator / Team Member in International collaborative projects, Grants-in-aid (GAP) projects, Sponsored projects and Consultancy projects. Handled more than 40 projects directly and more than 100 research projects for team-CIMFR (technical guidance as team coordinator) with all responsibilities of project handling, field monitoring, report submission, writing etc.

Besides 'academic contribution' for thesis Guidance at Ph. D, M. Tech and B.E. level in Mining and allied science /engineering field, enhancement of qualification is done while continuing in job. Academic contribution as examiner and evaluator have been made [for *journals, technical papers and as Member, Board of Studies for prestigious national institutions namely Rashtrasant Tukdoji Maharaj Nagpur University, (RTMNU) Nagpur, UOR (now IIT), Roorkee, NIT, Raipur and Visveswaraya National Institute of Technology (VNIT), Nagpur.*]. Provided *services to industry* (i.e. helped mine management to obtain renewal of leases and statutory clearances) and helped mine management in engineering evaluation and assessment. Notable R&D contributions have been made by way of publishing more than one hundred (100) publications (*excluding CIMFR / CMRI technical reports*) and one book authored by self on *MINING IN HIMALAYA* which is under print by internationally acclaimed publisher *CRC Press*. In addition shared additional responsibility of administration for CIMFR Regional Centre ,Unit -1 Nagpur as Scientist-in charge and Head (from August, 2009 onward and till to date).

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15. Technologies and Products/ Services (Developed / Licensed / Commercialized) :

- i. *Developed an Environmental Degradation Index (EDI) for application in fragile areas. (Work is published in book and national journal)*
- ii. *Developed a computer programme (AWQEFA) for routine check of air and water quality of mine sites and commercialized / sold (This computer package is included in CMRI publication titled - CMRI Software Packages)*
- iii. *Developed an approach for “Land Management based on Land Capability Classification Approach for Mining Land of Himalaya” (Agriculture science concept for management of mining land.)*
- iv. *A computer controlled **low temperature rock testing facility (LTRT)** is developed for rock testing under sub-zero temperature condition, using Liquid N₂ as cryogen. The facility is new and one of its type, developed for the first time in Indian mining industry. It is useful for tunneling and mining industry and like a product development. In terms of R&D it is similar / none other than creation of laboratory facility for CMRI/CIMFR, Dhanbad.*

16. Designs and Prototype Developed: PI see point No. 15 (v) for details

17. Honors and awards won for technological contributions or sociological impact of R&D:

- i. *Development of value added products by utilization of slate mining waste for application in construction / building industry.*
- ii. *Contributed a Country Paper in 2001 on “Artisanal and Small-scale Mining in India” [MMSD (2001) , “Artisanal and Small-scale Mining in India” – Country Paper No .78 prepared by S.L.Chakravorty Director NISM for Mining ,Minerals and Sustainable Development (MMSD) project by International Institute for Environment and Development (IIED), London and World Business Council for Sustainable Development (WBCSD); published as United Nations Documents relating to Mining Industry by UNEP & UNCTAD ; October- 2001 ; p 81.]*

Date : 15/06/2016



(A.K.SONI)
Signature