



Bio-data

1. Name : Dr. Krishna Kant Kumar Singh

2. Date of birth : 08.06.1961

3. Current Position and Address with telephone/Fax/e-mail:

i) Chief Scientist & HOS
 Environmental Assessment & Remediation Division
 CSIR-Central Institute of Mining & Fuel Research
 (Council of Scientific & Industrial Research)
 Barwa road, Dhanbad-826015, Jharkhand State

ii)

<p>(a) Official Room No. – 32, Main Building CSIR-Central Institute of Mining & Fuel Research, Barwa Road, Dhanbad-826015 Jharkhand State EPABX: 0326-229-6003/6010/6027, Ext.- 4393 Fax: 0326-2296025 E-mail: kkksingh@yahoo.com</p>	<p>(b) Residential Qtr. No.-V/09, CIMFR Colony, Barwa Road, Dhanbad-826015 Jharkhand State Phone: 0326-2296142 Cell: 9431912661</p>
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4. Educational Qualifications:

S. No.	Degree	Subject	Class/ Marks	Year	University	Additional particular/Rank
1.	B.Sc.(Hons.)	Physics (Hons.), Chemistry, Mathematics	First/ 72%	1981	Banaras Hindu University, Varanasi	-
2.	M.Sc.(Tech.)	Exploration Geophysics	First/ 72.5%	1985	Banaras Hindu University, Varanasi	-
3.	Ph.D.	Applied Geophysics	-	2003	Indian School of Mines, Dhanbad	Title “Delineation of subsurface inhomogeneities using Ground Penetrating Radar”. Guide: Prof. R. K. S. Chouhan.

5. Work experience

S. No.	Designation	Institution/Company	Period	Nature of Work
1.	Scientist- B	Central Mining Research Station, Dhanbad (from 15.02.1990 to 09.05.1994), Central Mining Research Institute, Dhanbad (from 10.05.1994 to 14.02.1995).	15.02.1990 to 14.02.1995	R&D (Geophysical Exploration for Coal & Non-coal Mining)
2.	Scientist-C	Central Mining Research Institute, Dhanbad.	15.02.95 to 14.02.2000	R&D (Geophysical Exploration for Coal & Non-coal Mining)
3.	Scientist- EI	-do-	15.02.2000 to 14.02.2004	R&D (Geophysical Exploration for Coal & Non-coal Mining)
4.	Scientist-EII	Central Mining Research Institute, Dhanbad (from 15.02.2004 to 31.03.2007), CSIR-Central Institute of Mining & Fuel Research, Dhanbad (from 01.04.2007 - continue)	15.02.2004 to 14.0.2009	R&D (Geophysical Exploration for Coal & Non-coal Mining)
5.	Sr. Principal Scientist	CSIR-Central Institute of Mining & Fuel Research, Dhanbad	15.02.2009 to 14.02.2014	R&D (Geophysical Exploration for Coal & Non-coal Mining)
6.	Chief Scientist	CSIR-Central Institute of Mining & Fuel Research, Dhanbad	15.02.2014 to Continue	R&D in Mining (Coal & Non-coal) & Mine Environment

6. Area of specialization: Rock Mechanics & Mining Sciences

7. Honours/Awards conferred earlier

- **Reviewer of the scientific papers of following Journals:**

1. Current Science, Current Science Association in collaboration with the Indian Academy of Sciences, India
2. International Journal of Geotechnical and Geological Engineering, Springer, Netherland
3. International Journal of Environmental Earth Sciences, Springer, USA
4. International Journal of Coal Geology, Elsevier, USA
5. International Journal, Hydrogeology, Springer, USA

- Got **National Geoscience Award-2013** in the Field of Mining Technology. This award is conferred by **Rashtrapati at Rashtrapati Bhawan** on 6th April, 2015.

- **Scientific work appreciated by Mahanadi Coalfields Limited for achieving enhanced production** by implementing the report carried out by applicant based on Resistivity Imaging Survey results.
- Appointed **Technical expert** by Coal India Limited, Kolkata, India in 2009 & 2013 for selection of **Management Trainees** by Campus Interview at ISM, Dhanbad.
- **H. S. PAREEK Award** by Geological Society of India, Bangalore for the best paper on Coal Sciences for 2010 & 2015 published in the Journal of Geological Society of India.
- **Examiner for evaluation of Dissertation of the final year M. Sc. Tech (AGP)**, ISM, Dhanbad, India from 2008 onwards.
- Nominated **Member** for the panel representing India for an **International Technical Committee, TC-10** on “Geophysical Site Characterisation”.
- Recipient of **First prize** for generating **highest ECF** (External Cash Flow) through S&T Projects for the year 2007-08 for CIMFR, Dhanbad.
- **Chairman** of a Technical Sessions and **key -note speakers** in Conferences such as “Mapping and Modeling of Deep Crustal Features using Geo-electromagnetics and other Geophysical Methods, 2007”; “Modern Trends in Geophysical Sciences and Techniques (MTGST-2007)”; “Technology Exchange Programme on Rock Instrumentation 2007” and “Recent developments in Geo-electromagnetism for crustal investigation” organized by UGC Centre of Advance Study Department of Applied Geophysics, ISM, Dhanbad on 30th March, 2015.

8. Fellowships/Scholarships: Bihar State Scholarship

9. No. of Research Publications:

- **Papers in journals:** 30
- **In conference proceedings:** 15
- **Invited/key-note addresses:** 40
- **List of best 05 publications:**

S. No.	Name of authors	Title of Paper	Name of Journal, volume, year and page
1.	Singh, K.K.K.	Borehole radar for delineation of unapproachable underground coal-mine galleries below Grand Chord railway lines.	Current Science (impact factor-0.935) Vol.109, No.9, November 2015, pp. 1722-1727.
2.	Singh, K.K.K.	MineVue Radar for Delineation of Coal Barrier Thickness in Underground Coal Mines: Case Studies.	Geological Society of India (impact factor-0.513) , Vol.85, February 2015, Issue 2, pp. 247-253.
3.	Singh, K. K. K.	Delineation of waterlogged area in inaccessible underground workings at Hingir Rampur Colliery using 2D resistivity imaging: a case study.	Bulletin of Engineering Geology and the Environment (impact factor-0.667) , Vol. 72:1, 2013 pp.115-118.
4.	Singh, K. K. K., Kumar Indresh and Singh, U.K.	Interpretation of Voids or Buried Pipes using Ground Penetrating Radar Modeling.	Geological Society of India (impact factor-0.596) , Vol.81, 2013, pp.397-404.

5.	Singh, K.K.K., Singh, A.K., Singh, K.B, and Sinha, A.	2D resistivity imaging survey for siting water-supply tube wells in metamorphic terrains: A case study of CMRI, campus, Dhanbad, India.	The Leading Edge , Vol.25, December 2006, pp.1458-1460
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10. Number of Books authored/edited: N.A.

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

(b) Technologies developed, Licensed and/or commercialized: A new Ground Penetrating Radar system namely “MineVue” has been developed having depth of penetration 60 m for detection of barrier thickness between the abandoned underground mine workings and contemporary mine developments to mitigate inundation hazard in underground coal mines. This is the world’s first longest range and lowest frequency shielded radar system, which has been granted permission by Directorate General of Mines Safety (DGMS), Dhanbad for use in underground gaseous coal mines. Intrinsically Safety certification has also been granted by the British Safety Authority, BASEEFA,U.K. With this technology, it is possible to identify the risk of inundation hazard in Indian coal mines. This system is a notable development for the safety of miners and machineries while working near water bodies and has addressed a long pending major safety problem of the mining industry. It is one of the noteworthy achievements in the emerging R&D areas which helped enable coal mining industry to exploit the coal with enhanced safety which were unapproachable and abandoned.

12. Foreign visits:

- Deputed to **Canada in 1997&2013** for attending **Advanced Training Program** on Ground Penetrating Radar System for future research.
- Deputed to **IRIS, France in 2003** for attending **Advanced Training Program** on Sycsal System (Multi-electrode Resistivity Imaging System).

13. Details of Professional memberships:

- Life Member –Geophysics (Earlier, Association of Exploration Geophysicists)
- Global Member - Society of Exploration Geophysicists
- Member – Mining, Geological and Metallurgical Institute of India

14. Major contributions: (Max. 150 words)

- Developed a new Ground Penetrating Radar namely “MineVue” first in the world for delineation of barrier thickness against waterlogged workings in underground coal mines to mitigate inundation hazard.
- Established Ground Penetrating Radar signatures for weak or fractured strata, solid strata, clay zone, waterlogged workings and voids.

- Contributed to mitigate mining hazards like, inundation, pot-hole subsidence and to know the status of sand stowing for stabilization of abandoned and unapproachable underground coal mine workings first time in India.
- Contributed to delineate underground abandoned mine galleries below Grand-Cord railway line and NH-2 G. T. Road first time in India for the safety of railway line & G.T. road and provided suitable surface locations having hard subsurface strata to layout the railway track and to lay foundations of heavy structures.
- Contributed to check contamination of groundwater from uranium and conducted study for groundwater exploration and management due to open pit iron-ore mining.
- The guidelines have been established for excavation of coal below ground workings in a joint collaborative project.
- Subsidence investigations over shallow gas reservoir (Surat) and coalmining areas.

15. Technologies and Products/ Services

- i) Developed:

A MineVue radar system has been developed having some special features, which makes this system different from other commercially available Ground Penetrating Radars in the world. These important features are listed below:

 - Deepest penetration of 60 m in coal,
 - First single-board radar,
 - Smallest low frequency (40 MHz) shielded radar,
 - First of its kind designed for intrinsically safe specifically for gaseous underground coal mines,
 - Directorate General of Mines Safety (DGMS), Dhanbad granted permission for use in gaseous underground coal mines & also certified by BASEEFA, U.K. for intrinsically safety,
 - First real-time sampling radar (64,000 stacks).
- ii) Licensed: N.A.
- iii) Commercialized: N.A.

16. Designs and Prototype Developed:

During development of our MineVue Radar system, we have designed some prototype radars of different frequencies varied from 100 MHz to 40 MHz and done experiments successfully in different coal mines for fulfilling the objectives of the project for depth of penetration of 60 m in underground coal mines to mitigate inundation hazard.

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

- Got National Geoscience Award-2013 in the Field of Mining Technology. This award is conferred by Rashtrapati at Rashtrapati Bhawan on 6th April, 2015.
- H. S. PAREEK Award by Geological Society of India, Bangalore for the best paper on Coal Sciences for 2010 & 2015 published in the Journal of Geological Society of India.
- Recipient of First prize for generating highest ECF (External Cash Flow) through S&T Projects for the year 2007-08 for CIMFR, Dhanbad.



24/06/2016
Signature