Brief Bio-data

1. Name: Dr. Ranjit Kumar Paswan

2. Date of Birth: 05.11.1985

3. Current Position and Address (Include Email ID and Contact Number):

Scientist, Rock Excavation Engineering Research Group
E-mail: rkpaswan@cimfr.nic.in
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4. Educational qualifications: (Graduation and above)

Sl. No.	Degree	Year of Passing	University/Institute	Subject
1	Ph.D.	2016	Indian Institute of Technology (ISM), Dhanbad	Geotechnical Engineering and Rock blasting
2	M.Sc.	2011	Banaras Hindu University, Varanasi	Applied Geology
3	B.Sc.	2009	Patna University, Patna	Geology

5. Work experience:

Designation	Institute/company	From	To	Nature of Work
Scientist	CSIR - Central Institute of Mining and Fuel Research, Dhanbad	20.09.2017	Till date	Field investigations, data analysis and publication of scientific outputs in the form of report and research papers
Senior Project Fellow	CSIR - Central Institute of Mining and Fuel Research, Dhanbad	08.02.2016	23.09.2016	Data collection, Analysis & Report preperation
Project Assistant	CSIR - Central Institute of Mining and Fuel Research, Dhanbad	16.08.2011	05.02.2016	Data Collection

6. Work Area(s)/ Specialization: Rock blasting technology and geotechnical engineering

7. Major contributions: (Max. 100 words):

- Successfully completed an S & T Project titled “Blast design and fragmentation control – key to productivity” funded by Ministry of Coal, Govt. of India as being an active team member of the project and presented the finding of the research work at CMPDIL, Ranchi.
- Successfully completed an S & T in-house Project titled “Standardisation of dragline blast design to control vibration within safe limit”, funded by CSIR – Central Institute of Mining and Fuel Research, Dhanbad as being an active team member of the project.

- Actively involved in several sponsored and consultancy projects of mining and infrastructure for mitigation of blasting related problems.

8. No. of Research Publications:

- Papers in Journals: 12
- In conference proceedings: 12
- Invited lectures delivered: Nil
- List of best 05 publications:

i. Himanshu, V. K., Roy, M. P., Mishra, A. K., Paswan R. K., Deepak Panda, Singh, P. K. (2018). Multivariate statistical analysis approach for prediction of blast induced ground vibration. Arabian Journal of Geosciences. Vol 11:460. pp 1-11. https://doi.org/10.1007/S12517-018-3796-8

ii. Roy M P, Paswan R K, Sarim Md., Kumar S, Jha R K, Singh P K. (2016). Rock Fragmentation by Blasting – a review. Journal of Mines Metals & Fuels. Vol. 64(9): 424-431.

iii. Singh P K, Roy M P, Paswan R K, Md. Sarim, Kumar S and Jha R R. (2015). Rock fragmentation control in opencast blasting. Journal of rock mechanics and geotechnical engineering. Vol. 8(2): 225-237. http://dx.doi.org/10.1016/j.jrmge.2015.10.005

iv. Singh P K, Roy M P, Paswan R K, Dubey R K, Drebenstedt C. (2014). Blast vibration effects in an underground mine caused by open-pit mining. International Journal of Rock Mechanics and Mining Sciences. Vol. 70. pp 79-88. DOI: 10.1016/j.ijrmms.2015.09.009

v. Singh P K, Roy M P and Paswan R K. (2013). Controlled Blasting for Long Term Stability of Pit-walls. International Journal of Rock Mechanics and Mining Sciences. Vol.70. pp 388-399. DOI: 10.1016/j.ijrmms.2014.05.006

- Books/Chapters authored/edited

9. List of 5 Major Contract R&D Projects:

i. Study and advice for blasting optimization at Balaria, Baroi, Mochia and Zawarmala underground mines of M/s Hindustan Zinc Limited for safe and efficient exploration of minerals. (SSP/306/2018-19).
ii. Study and design of blasting parameters with continuous monitoring of blast induced vibration around surface structures in the periphery of Kayad underground mine. (SSP/434/2019-20).
iii. Study and advice for optimisation of blast design parameters for flattening of southern portion of Ulwe Hill and as a part of the land development works for construction of Navi Mumbai International Airport (NMIA) (SSP/481/20-21).
iv. Design and continuous supervision of foundation blasting work at Betwa river for construction of Jhansi-Bina 3rd railway line bridge considering the safety and stability of existing bridge situated at a distance of 25 m (SSP/468/20-21).
v. Scientific study for designing and execution of controlled blasting at dam site of Punatsangchu-I Hydroelectric Project Authority (PHPA-I), Bhutan (SSP/486/20-21)

10. (a) Name of Patents/Copyrights applied /granted/commercialized:

Sl No.	Title	Country	Filed on (Date)	Granted on (Date)	Names of other inventors
1.	Method for excavation of slot raise and rings simultaneously in underground stope using drilling and blasting [Patent Application No. 0033NF2021]	India	23.02.2021	-	MURARI PRASAD ROY, VIVEK KUMAR HIMANSHU, RANJIT KUMAR PASWAN, SURAJ KUMAR, CHHANGTE SAWMLIANA, PRADEEP KUMAR SINGH

(b) Technologies/Products /knowhow/Services developed:

11. Honors/Awards/Recognitions/Fellowships/Scholarships/Professional Memberships received:

Received letter of appreciation from Divisional Commissioner, Magadh Division, Gaya for outstanding performance of the Scientists of Rock Excavation Engineering Division of CSIR-CIMFR for dismantling of unstable boulder located at Brahmayoni Hills, Gaya.

12. Societal Contributions

Developed air decking tool from the waste of the explosives cartridges packaging material and successfully used it in blast holes to create air gap of 1.5 to 2 m between the explosives columns. The air deck tools have been extensively used by mines and have saved about 15% in the cost of explosives and have improved the rock fragmentation too which is in accordance to Waste to Wealth.

The concept of differential decking and multiple decking in blastholes not just improved the fragmentation level but also reduced the expenses of Explosives and unwanted outcomes of blasting viz. ground vibration, air-overpressure etc. with enhanced safety, productivity and sustainability of opencast mines.

(Ranjit K Paswan)
Scientist, REE Research Grou
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