1. Name: Ashok Kumar

2. Date of Birth: 27 years

3. Current Position and Address: (with E-mail & Phone no.)

Scientist
Strata Mechanics Group,
CSIR-Central Institute of Mining and Fuel Research,
Barwa Road, Dhanbad, 826015 (Jharkhand).
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Email : ashok@cimfr.nic.in / ashok.kumar.min09@itbhu.ac.in / ashok.bhu.min09@gmail.com

4. Educational qualifications: (Graduation and above)

S. No.	Degree/ Certificate	Year of Passing	University/ Institute	Subjects
i	B. Tech.	2013	IIT (BHU)	Mining Engineering
ii	M.Tech.	2015	AcSIR	Mine Safety Engineering

* Pursuing *Ph.D.* from IIT(ISM), Dhanbad.

5. Work experience:

S. No.	Designation	Institution/company	From	To	Nature of work
i	Trainee Scientist	CSIR-CIMFR	Aug, 2013	Dec, 2015	R&D for efficient underground coal mining
ii	Scientist-I	NIRM	Dec, 2015	April, 2016	Rock Blasting & Excavation Engg.
iii	Scientist	CSIR-CIMFR	April, 2016	continued	R&D for efficient underground coal mining

6. Area of specialisation:

Rock Mechanics, Numerical Modeling, Mechanised/Semi-mechanised Bord & Pillar Workings, Mining Methods for Extraction of Thick Coal Seam, Ground Control Investigations during Depillaring using Geo-technical Instruments.

7. Honors/Awards received:

i. First rank holder in M.Tech with **CGPA 9.79.**
ii. Second rank holder in B.Tech. with **CGPA 8.35.**
iii. Qualified **GATE** in 2013.
iv. **First Prize in X'hibit** (a model making competition) organised in METTLE (a technical fest of IIT BHU Mining Engineering).
v. **Pratibha Samman** awarded by **Chief Minister of Bihar** Mr. Nitish Kumar for **qualifying IIT-JEE.**
vi. Merit Certificate in 10^{th} from CBSE for scoring **100 in Mathematics**.

8. Fellowships/Scholarships: ---
   i. Merit cum Means Scholarship holder in B.Tech.
   ii. Trainee Scientist scholarship for carrying out masters at CSIR-CIMFR.

9. No. of Research Publications:
   - Papers in journals : **6** (IJRMMS-2, AJGS-1, JGSI-1)
   - In conference proceedings : **7** (International Conferences-6)
   - Invited/key-note addresses : **0**
   - List of best 05 publications:

   i. **Ashok Kumar**, Dheeraj Kumar, Amit Kumar Verma, Arun Kumar Singh, Sahendra Ram and Rakesh Kumar (2017): Influence of overlying roof strata on rib design in mechanised depillaring. **Accepted for publication in Journal of the Geological Society of India**. (IF-0.596)
   ii. **Ashok Kumar**, Rakesh Kumar, Arun Kumar Singh, Sahendra Ram, Pradeep Kumar Singh & Rajendra Singh (2017): Numerical modelling-based pillar strength estimation for an increased height of extraction. **Arabian Journal of Geosciences,** Vol. 10, Issue. 18. (20th September, 2017) doi: 10.1007/s12517-017-3179-6. (IF-0.955)
   iii. Rajendra Singh, Sahendra Ram, Arun Kumar Singh , **Ashok Kumar**, Rakesh Kumar and Amit Kumar Singh (2017): Rock mechanics considerations for roof-bolt based breaker-line design, **Procedia Engineering**, Vol. 191 (June, 2017), pp.551-559.
   iv. Sahendra Ram, Dheeraj Kumar, Arun Kumar Singh, **Ashok Kumar** and Rajendra Singh (2017): Field and laboratory studies for an efficient placement of roof bolts as breaker line support. **International Journal of Rock Mechanics & Mining Sciences**, Vol. 93 (March, 2017), pp.152–162. (IF-2.268)
   v. Arun Kumar Singh, Sahendra Ram, Rajendra Singh and **Ashok Kumar** (2016): Rib/snook competency in mechanised depillaring of the conventionally developed coal seams. **Journal of Mines Metals and Fuels**, Special Issue on CSIR-CIMFR, Vol. 64 (9th September, 2016), pp. 414-423.
   vi. Rajendra Singh, **Ashok Kumar**, Arun Kumar Singh, John Coggan and Sahendra Ram (2016): Rib/snook design in mechanised depillaring of rectangular/square pillars. **International Journal of Rock Mechanics & Mining Sciences**, Vol. 84 (April, 2016), pp.119-129. (IF-2.268)

10. Number of Books authored/edited: --- **0**

11. (a) No. of Patents ~~granted~~/applied for: **2**

   i. Indigenous design of rib/snook for mechanised depillaring. Submitted to the concerned authority in CSIR (2015). Investigators: Rajendra Singh, Arun Kumar Singh, Sahendra Ram, **Ashok Kumar**, Rakesh Kumar and Amit Kumar Singh. (**Status- Filed, No. 3765DEL2015**).
   ii. A method for efficient design of breaker line support in mechanised depillaring. Submitted to the concerned authority in CSIR (2016). Investigators: Sahendra Ram, Rajendra Singh, Dheeraj Kumar, Arun Kumar Singh, **Ashok Kumar**, Rakesh Kumar and Amit Kumar Singh. (**Status- Filed, No. 0244NF2016**).

   (b) Technologies developed, Licensed and/or commercialized:
   i. Developed design norms for the design of rib/snook for mechanised depillaring.

12. Foreign visits:

1. Visited **Czech Republic** from **19/06/2017 to 25/06/2017** and participated in **EUROCK 2017** under the Bilateral Collaborative Research Programme.

13. Details of Professional memberships: ---

i. Mining Engineers' Association of India.
ii. The Mining Geological and Metallurgical Institute of India.
iii. Society for Mining, Metallurgy & Exploration.

14 . Major contributions: (Max. 150 words)

My extensive field study and numerical modelling provided valuable addition to R&D in mining industry. Some of the important R&D contributions are:

i. Design of different elements for Continuous Miner based mechanised depillaring.
ii. Numerical Modeling and field investigation based performance evaluation.
iii. Extensive ground control study using different geo-technical instruments and automation of measurements of strata movement during underground coal mining.
iv. Empirical models for mining induced stress development during depillaring.

15. Technologies and Products/ Services

(i) Developed:

a. Rib/snook design in continuous miner based mechanised depillaring under moderate roof strata.
b. Devised a formula to calculate the area of rib/snook for a given depth of cover and nature of roof.
c. Manner of extraction and norms to design underground mining structures for a fully mechanised depillaring of locked-up coal pillars in the deep seated deposits.

(ii) Licensed: NA

(iii) Commercialized: NA

16. Designs and Prototype Developed: **NA**

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

Signature