



Journal of Rock Mechanics & Mining Sciences, 123, 104131. DOI: 10.1016/j.jrmms.2019.104131.

- (ii) Singh AK, Kumar A, Kumar D, Singh R, Ram S, Kumar R, **Singh, AK** (2021). Field and Simulation Studies for Mechanised Depillaring Below Incompetent Geological Formations of an Indian Coalmine. Journal of Geological Society of India, Vol. 97, April 2021, pp 405-421, DOI: 10.1007/s12594-021-1698-y.
- (iii) Kumar, R., Mishra, A. K., Singh, **A. K.**, **Singh**, A. K., Ram, S., and Singh, R. (2016): Depillaring of total thickness of a thick coal seam in single lift using cable bolts: a case study. International Journal of Mining Science and Technology, 26(2016), pp. 223-233.
- (iv) Singh, Rajendra, Ram, Sahendra, Singh, Arun Kumar, Kumar, Ashok, Kumar, Rakesh and **Singh, Amit Kr.**, (2017): Rock Mechanics Considerations for Roof Bolt-Based Breaker Line Design. Procedia Engineering (Symposium of the International Society for Rock Mechanics), 191 (2017) 551 – 559.
- (v) Singh, R. Ram, Sahendra, **Singh, Amit Kumar**, Prasad Shailly and Buragohain, John (2004): Underground extraction of contiguous coal seams/sections consisting thin parting: a case study. Journal of South African Institute of Mining and Metallurgy (SAIMM), 104(1), pp. 17-27.

- Books/Chapters authored/edited: One

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

- (i) Development of a model vis-à-vis study of parameters influencing abutment loading of pillars at a depillaring face of shallow depth cover and under massive strata, sponsored by Ministry of Coal, Govt. of India.
- (ii) Development of a mining method for final extraction of a critically thick coal seam standing on pillars along the roof horizon, sponsored by Ministry of Coal, Govt. of India.
- (iii) Scientific study of strata movement during widening and heightening of existing galleries and depillaring of CM panels A1-A and A1-B of No. 1 at GDK-11 Incline mine, RG-I Area, SCCL through underground instrumentation and monitoring.
- (iv) Scientific study to assess the efficacy of the support system during the working of the panel and thereafter continuously monitor the strata movement from the outside of the panel till the completion of extraction in the panel and two subsequent years at Sarni UG Mine E3 panel of Pathakhera Area, WCL.
- (v) Advice for safe depillaring of LK-6, LK-7, and LK-8 panels of Lower Kajora seam at Central Kajora Colliery by Cable bolting based depillaring method through underground instrumentation and monitoring

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

- (i) A model for rib/snook design in mechanised depillaring under moderate roof strata.
- (ii) A Method for Efficient Design of Breaker Line Support in Mechanized Depillaring.

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

- Cable bolting based mechanised depillaring method for extraction of thick and difficult coal seams.
- Underpinning based depillaring method for thick and contiguous seams/sections under weak and laminated parting.
- Empirical model to assess nature and amount of mining induced stress development over the coal pillars during a depillaring operation and
- Efficient design of rib and breaker line support in mechanized depillaring.

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

12. Societal Contributions:

Our R&D contributions encourages the industry to adopt the underground mining methods for coal extraction which results into reduction in disastrous environmental impacts (air, Noise and water pollution) on surrounding area, flora and fauna by opencast mining.