## Brief Bio-data

1. Name: Dr. Saurav Rukhaiyar

2. Date of Birth: 26/01/1989

3. Current Position and Address: Scientist

CSIR-Central Institute of Mining and Fuel Research
Nagpur Research Centre, 17/C, Telenkhedi
Area, Civil Lines, Nagpur, Maharashtra- 440001
Email- srukhaiyar@cimfr.nic.in
Contact No.-7520093692

4. Educational qualifications: (Graduation and above)

| Sl. No. | Degree | Year of Passing | University/Institute | Subject |
|---|---|---|---|---|
| 1 | Ph. D | 2017 | IIT Roorkee | - |
| 2 | M. Tech | 2012 | IIT Roorkee | (Civil Engg.) |
| 3 | B. Tech | 2010 | BIT Sindri/ VBU Hazaribagh, | (Civil Engg.) |

5. Work experience:

| Designation | Institute/company | From | To | Nature of Work |
|---|---|---|---|---|
| Scientist | CSIR-CIMFR, Dhanbad | 22/12/2017 | Till Date | R & D / Technical Services |
| Lecturer | Thapar University, Patiala Punjab | 31/08/2017 | 15/12/2017 | R & D / Teaching |

6. Work Area(s)/ Specialization:
Experimental Rock Mechanics, Rock excavation Technology (Blasting Technology), Numerical Modelling of rock structures, SC/ML application in Rock engineering

7. Major contributions: (Max. 100 words)

- Successfully completed Nineteen (19) No. of projects related to investigation of Geotechnical Properties of bore hole rock core samples from various mines.
- Successfully conducted Blast vibration studies for five number of mines in Kerala for design safe charge pattern.
- Developed machine learning based model for prediction of strength and elastic modulus of rock samples from simple physico-mechanical test and for prediction of Blast induced Vibration.
- Numerical simulation-based study of underground metal mines for its stability analysis.

8. No. of Research Publications:
- Papers in Journals: 11
- In conference proceedings: 10

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- Invited lectures delivered: 4
- List of best 05 publications:
    I. A polyaxial strength model for intact sandstone based on Artificial Neural Network, IJRMMS, 2017, Vol. 95, pp. 26-47.
    II. Strength behavior of plain cement concrete subjected to true-triaxial Compression. CJCE, 2018, 45 (3), 179 – 196.
    III. Triaxial behaviour of rockmass satisfying Modified Mohr-Coulomb and Generalized Hoek-Brown criterion, IJMST, 2018, 28 (6), 901-915
    IV. A New Intelligent Model for Computing Crack in Compacted Soil-Biochar Mix: Application in Green Infrastructure. GGE, 2020, 38(1), pp.201-214.
    V. Predicting Blast-Induced Ground Vibrations in Some Indian Tunnels: A Comparison of Decision Tree, Artificial Neural Network and Multivariate Regression Methods. MMEX, 2020, Vol. 37, pp.1039 - 1053.
- Books/Chapters authored/edited: Nil

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

    i. SSP/296/2018-19: Assessment of Physico-mechanical properties of BH# MGS-61 (NP-23) of Gouranddih South Block (CIL Block) Raniganj Coalfield.
    ii. SSP/328/2018-2019: Assessment of Sonic velocity and Slake durability Index properties of rock core samples from BH # MGMN 8, 9 & 12 of Gare-Pelma sector of Mand Raigarh Coalfield, Chattishgarh and advice thereof.
    iii. SSP/391/2019-20: Assessment of Physico-mechanical properties of BH# MRKB-43 (P-53) of Kabitirtha block, Raniganj Coalfield.
    iv. SSP/392/2019-20: Assessment of Physico-mechanical properties of BH# CMBS-54 of Salbhadra Gomarpahari block, Birbhum Coalfield.
    v. SSP/394/2019-20: Study on different Physico- mechanical properties of Chromite ores and associated rocks in different borehole at Sukinda Chromite Mines, Tata Steel Ltd., Odisha.

10. (a) Name of Patents/Copyrights applied /granted/commercialized: Nil
    (b) Technologies/Products /knowhow/Services developed: Nil

11. Honors/Awards/Recognitions/Fellowships/Scholarships/Professional Memberships received:
    i. MHRD Research Fellowship for Doctoral Studies (2012-2017)
    ii. Best Paper Awards for the paper titled 'Stability Analysis of a slope section using Neural Network' from Indian Society of Rock Mechanics and Tunnelling Technology (ISRMTT).

12. Societal Contributions:
    Contributing to a number of projects of national importance like Mumbai Metro & Bangalore Metro projects construction, Mumbai-Nagpur Samruddhi Mahamarg project, Lift Irrigation Projects etc.

Gaurav Lukhaiyar
31/08/2021