ROCK SCIENCE AND ROCK ENGINEERING LABORATORY

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RESEARCH THEME

Ph.D: Evaluation and Prediction of Blast Induced Ground Vibration and Frequency for Surface Mine - A Neural Network Approach

KEY ACADEMIC PROJECTS

1. **Application of neural network for study on effect of blast design parameters on blast induced ground vibration** funded by **Council of Scientific & Industrial Research, Govt. of India** (2003-2007).
2. Project entitled "**Application of neural network for the prediction of blast induced ground vibration**" was sponsored by Dept of Education, Employment and Workplace Relations, **Govt. of Australia**, 2008-09**.**

KEY ACADEMIC ACHIEVEMENTS

- **Endeavour Research Fellow**: Dept of Civil Engg, Monash University, Australia from Oct, 2008 to March, 2009.
- **Senior Research Fellow**: Central Institute of Mining & Fuel Research, Dhanbad from Nov, 2002 to Aug, 2004.

POSITION OF RESPONSIBILITY (Top Ten)

1. **Project proposal reviewer,** National Center of Science and Technology Evaluation, Ministry of Education and Science, Astana, **Republic of Kazakhstan, 2012.**
2. **Keynote Speaker**: The 2nd International Conference on New Energy and Sustainable Development (NESD2013), Nov 29 – Dec 01, 2013, Sanya, China.
3. **Member** – **Technical Program Committee** – The 3rd International Conference on Geology and Geophysics (ICGG 2014), June, 13 – 15, 2014, Beijing, China.
4. **Member** – **Organizing Committee** - International Conference on New Energy and Sustainable Development (NESD2013), June 14 – 16, 2013, Beijing, China.
5. **Member** – **Organizing Committee** – The 2nd International Conference on Geology and Geophysics (ICGG), Dec 03 – 05, 2013, Sanya, China.
6. **Editor-in-chief – Earth Resources**, SciKnow Publications, USA, Print ISSN: 2330-3301, Online ISSN: 2330-3328. http://www.sciknow.org/journals/show/id/er
7. **Editorial Board Member** of more than 15 International Journals.
8. **Project proposal reviewer**, Ministry of Science and Technology, Govt. of India, 2012.
9. **Chairman**, CafetInnova Technical Society, Rajasthan Chapter (2008 – 10).
10. **Reviewer of more than 50 International journals**

AWARDS AND RECOGNITIONS (TOP FIVE)

1. **Young Scientist Award** by **Indian Science Congress Association**, 2006 (by the then honorable **President of India**).
2. **Endeavour Research Fellowship** from Department of Education, Employment and Workplace Relations, **Govt of Australia**, 2008.
3. **Young Engineer Award** by **Intuition of Engineers (India)**, 2009
4. **Engineering Research Fellowship** by **Monash University**, Australia, 2010
5. **Young Mining Engineer of the Year Award** by **Mining Engineers' Association of India**, 2012.

PUBLICATIONS (Impact Factor >1.0 only)

1. **Manoj Khandelwal**& T.N. Singh, 2013, Application of an Expert System to Predict Maximum ExplosiveCharge Used Per Delay in Surface Mining, ***Rock Mechanics and Rock Engg***, Springer Publications 46, 1551-1558 **[Impact Factor: 1.160]**.

2. **Manoj Khandelwal**, 2013, Correlating P-Wave Velocity with the Physico-mechanical Properties of Different Rocks, ***Pure and Applied Geophysics,*** Springer Publications, 170(4), 507-514 **[Impact Factor: 1.617]**.

3. **Manoj Khandelwal**& M. Monjezi, 2013, Prediction of Backbreak in Open-Pit Blasting Operations Using the Machine Learning Method, ***Rock Mechanics and Rock Engg***, Springer Publications, 46, 389-396 **[Impact Factor: 1.160]**.

4. R. Rai, **Manoj Khandelwal**& A. Jaiswal, 2012, Application of Geogrids in Waste Dump Stability: A Numerical Modeling Approach, ***Environmental Earth Sciences,*** Springer Publications, 66(5), 1459-1465 **[Impact Factor: 1.145]**.

5. P.G. Ranjith & **Manoj Khandelwal**, 2012, Artificial Neural Network for Prediction of Air Flow in A Single Rock Joint, ***Neural Computing and Applications***, Springer Publications, 21(6), 1413-1422 **[Impact Factor: 1.168]**.

6. **Manoj Khandelwal**, 2012, Application of an Expert System to Predict Thermal Conductivity of Rocks, ***Neural Computing and Applications***, Springer Publications, 21(6), 1341-1347 **[Impact Factor: 1.168]**.

7. A. Bhatnagar & **Manoj Khandelwal**, 2012, An Intelligent Approach to Evaluate Drilling Performance, ***Neural Computing and Applications***, Springer Publications, 21(4), 763-770 **[Impact Factor: 1.168]**.

8. **Manoj Khandelwal**, 2011, Prediction of Thermal Conductivity of Rocks by Soft Computing, ***Int J of Earth Sciences,*** Springer Publications, 100 (6), 1383-1389 **[Impact Factor: 2.261]**.

9. A. Bhatnagar, **Manoj Khandelwal**& K.U.M. Rao, 2011, Laboratory Investigations for the Role of Flushing Media in Diamond Drilling of Marble, ***Rock Mechanics and Rock Engg***, Springer Publications, 44 (3), 349-356 [**Impact Factor: 1.160]**.

10. P.K. Sharma, **Manoj Khandelwal** & T.N. Singh, 2011, A Correlation between Schmidt Hammer Rebound Numbers with Impact Strength Index, Slake Durability Index and P-Wave Velocity, ***Int J of Earth Sciences,***Springer Publications, 100 (1), 189 – 195 **[Impact Factor: 2.261]**.

11. **Manoj Khandelwal**& P.G. Ranjith, 2010, Correlating Index Properties of Rocks with P-wave Measurements, ***Journal of Applied Geophysics***, Elsevier Publications, 71 (1), 1-5 **[Impact Factor: 1.327]**.

12. B. Scott, P. G. Ranjtih, S. K. Choi & **Manoj Khandelwal**, 2010, Geological and geotechnical aspects of underground coal mining methods within Australia, ***Environmental Earth Sciences***, Springer Publications, 60, 1007-1019**[Impact Factor: 1.145]**.

13. **Manoj Khandelwal**& T.N. Singh, 2010, Prediction of Macerals Contents of Indian Coals from Proximate and Ultimate Analyses Using Artificial Neural Network, ***Fuel,*** Elsevier Publications, 89 (5), 1101-1109 **[Impact Factor: 3.357]**.

14. **Manoj Khandelwal**, 2010, Evaluation and Prediction of Blast Induced Ground Vibration using Support Vector Machine, ***International Journal of Rock Mechanics & Mining Sciences,*** Elsevier Publications, 47 (3), 509-516 **[Impact Factor: 1.200]**.

15. **Manoj Khandelwal**& T.N. Singh, 2009, Prediction of Blast Induced Ground Vibration using Artificial Neural Network, ***International Journal of Rock Mechanics & Mining Sciences,*** Elsevier Publications, 46, 1214-1222 **[Impact Factor: 1.200]**.

16. **Manoj Khandelwal**& T.N. Singh, 2009, Correlating Strength Properties of Coal Measure Rocks with P-wave Velocity, ***International Journal of Coal Geology,*** Elsevier Publications, 79, 55-60 **[Impact Factor: 2.976]**.

17. P.K. Sharma, **Manoj Khandelwal**& T.N. Singh, 2007, Variation on Physico-Mechanical Properties of Kota Stone under Different Watery Environments, ***Building and Environment,*** Elsevier Publications, 42, 4117-4123 **[Impact Factor: 2.430]**.

18. **Manoj Khandelwal**& T. N. Singh, 2007, Evaluation of Blast Induced Ground Vibration Predictors, ***Soil Dynamics and Earthquake Engg***, Elsevier Publications, 27 (2), 116-125 **[Impact Factor: 1.276]**.

19. **Manoj Khandelwal**& T.N. Singh, 2006, Prediction of Blast Induced Ground Vibrations and Frequency in Opencast Mine – A Neural Network Approach, ***Journal of Sound & Vibration,*** Elsevier Publications, 289, 711-725 **[Impact Factor: 1.613]**.

BOOK

Soft Computing Approach to Evaluate and Predict Blast Vibrations, Lambert Academic Publishing, ISBN 978-3-8484-1875-6