



Editorial– Dedicated to Prof. Bhawani Singh

*“Live as if you were to die tomorrow. Learn as if you were to live forever” -
Mahatma Gandhi*

On behalf of the members /editors of the Editorial board, Journal of Rock Mechanics and Tunnelling Technology (JRMTT) and my own behalf, we pay our homage to Dr. Bhawani Singh (Founder Chairman, Editorial Board, JRMTT) who left for his heavenly abode in the morning of 4th May, 2021 leaving behind a wealth of memories for Rock Mechanics fraternity of India and abroad. The news of Prof. Singh’s sudden demise has deserted many of his friends, colleagues, researchers and the students more so because he was a great source of inspiration as a teacher, a researcher and a human being. Even at the age of 81, he was not only very active spiritually but also technically. He made monumental contributions in rock engineering during last five decades, the journey of which is mentioned in subsequent paragraphs.



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In early 70’s rock mechanics in India being a new development in engineering attracted attention of the researchers and practising engineers involved in the execution of major hydro-electric projects, road infrastructure and mining sectors as a result of which it became essential that the available knowledge in these subject areas are well shared and the unknown regions of knowledge are reduced to minimum so as to achieve economy and ensure the safety of the massive structures. Therefore, sincere efforts were initiated in early years of seventy (approx. 50 years ago) towards congregating active and dynamic members of the Indian rock engineering fraternity to coordinate their research and field experiences gathered during their professional lives by organizing seminars, symposia, workshops etc.

The first attempt in this direction was made by the Institution of Engineers (India) by organizing the first two symposia on rock mechanics in 1972 and 1976 at Dhanbad and the third one at Roorkee in 1985. The first conference on Rock Mechanics and Tunnelling was organized by Indian Geotechnical Society (IGS) at Kurukshetra in 1973. Prof. Bhawani Singh developed keen interest in rock engineering during his association with his Guru Prof. Charles Fairhurst at the University of Minnesota, USA from 1971-1973. He could have continued to stay over there and finally settled in USA but his feelings for serving the nation motivated him to come back to India and serve his alma mater.

University of Roorkee (UOR/IITR) started participating in a national mission on R&D of Rock Mechanics from 1974 onwards under the leadership of Prof. Bhawani Singh who remained thickly associated with the university as a student (B.E., M.E., Ph.D.) and then as a faculty member of Civil Engineering department since 1964 till his superannuation in 2000. Subsequently IIT Delhi, CIMFR Dhanbad, IRI Roorkee, BIS, NIRM Bengaluru, IIT (BHU) Varanasi, CSMRS New Delhi, CRRRI New Delhi, CBRI Roorkee, CWPRS Pune, CBIP New Delhi, etc. also took active part towards the growth of rock mechanics in India. Since 1993, Indian Society for Rock Mechanics and

Tunnelling Technology (ISRMTT) has also been playing key role for the fast growth of R&D in Rock Engineering.

Prof. Singh had a deep affinity for Roorkee town which is located at the foothills of Himalayas and is ideally located in the country for research in rock mechanics and underground space technology. He used this God-given opportunity to carry out important research work in Himalayan region which he used to consider as the best field laboratory in the whole world for learning rock engineering and geology, and their applications in Civil Engineering works. UOR did pioneering work in this new field of rock engineering since its first M.E. dissertation in 1971.

For Prof. Bhawani Singh's outstanding contribution, the Roorkee local chapters of IGS and ISRMTT organized a national workshop on Application of Rock Engineering in nation's development (27-28th April, 2001) in his honour. He co-authored five books on Rock Engineering covering different aspects such as Rock Mass Classification, Software for Engineering Control of Landslide and Tunnelling hazards, Tunnelling in weak rocks and Underground infrastructures, along with Dr. R.K. Goel, the editor of JRMTT published by Elsevier Science and Balkema between 1999 to 2012.

If we closely look at different topics of Ph.D. theses carried out under his guidance, it would show that whereas Prof. Singh had given due importance to theoretical analysis and computer techniques, he had never ignored the actual behavior of rock mass and the structures built on it. Most of the research works carried out under his guidance deal with field instrumentation and observations, the detailed analysis of which have given an insight into the actual behavior of rock mass when subjected to loading / unloading during construction of the massive structures and its long-term performance.

Prof. Bhawani Singh possessed a rare combination of combining highly theoretical / analytical work with the observations of actual underground excavations. He had realized this very early in his career and focused on making actual observations in the field so as to provide meaningful interpretation of the field data.

Although Prof. Singh is not with us physically but he will always keep inspiring the rock mechanics fraternity of not only India but the entire world.

Our humble tributes to the departed soul.....

- Dr. Subhash Mitra
Chief Editor, JRMTT