

Department of Mining Engineering - A Profile

VISION

Strengthening Education and Research in Major Field of Mining Engineering and Minor Fields of Underground Space Technology & Geomatic Engineering



INDIAN SCHOOL OF MINES
DHANBAD – 826004

Contact

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Department of Mining Engineering
Dedicated to the Service to Industry Since 1926

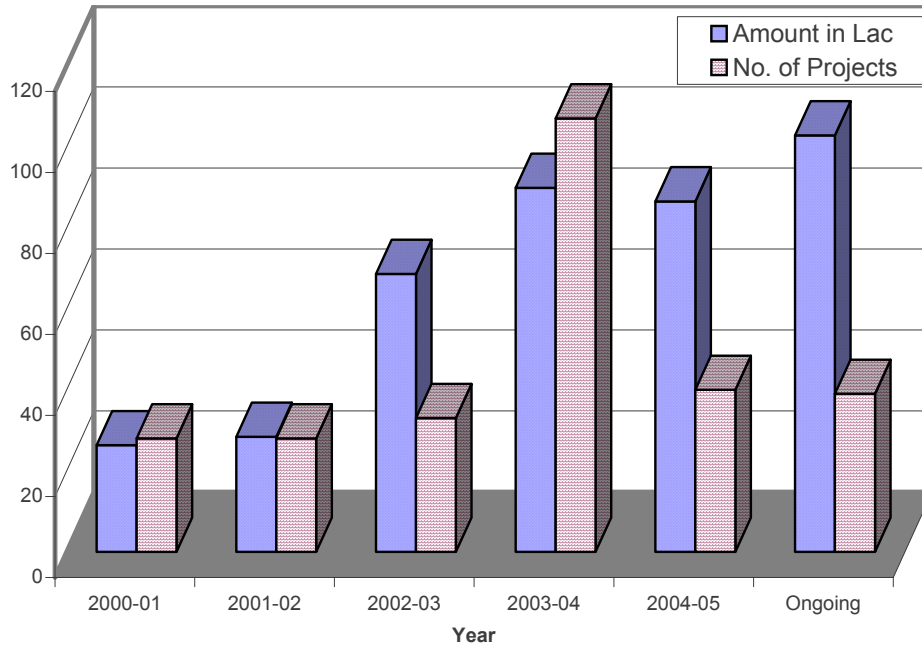
Our Academic Activities

B.Tech Mining Engineering
M.Tech

- Mining Engineering,
- Opencast Mining,
- Mine Planning & Design,
- Rock Excavation Engineering
- Underground Space Technology.
- Geomatic Engineering.

Ph. D. & DS.C. Mining Engineering

Research & Development and Services to Industry



Growing Industry-Institute Interaction

R&D projects

- **Completed in last 5 years: 7 no. (101 Lakhs)**
- **On going: 6 no. (160 Lakhs)**

Our Services

- ✚ Executive Development Programme in Mining and allied area
- ✚ Testing facilities for Rock, Mine Gases, Mine Supports
- ✚ Consultancies in the filed of Ground Control & Support Design, Rock Characterization for TBM, Mine fire & ventilation, Surveying, Mine Planning & Design, Explosive and Blasting,

ABOUT THE DEPARTMENT

The Department of Mining Engineering was established in 1926 with the founding of the School in that year. Over the Past 79 years, it has developed and grown to become the largest Department of its kind in the country with excellent facilities for teaching and research and widespread activities in both coal and non-coal/metalliferous mining. Its high reputation attracts students from all parts of India as well as from other countries.

The Department has been recognized as a QIP Centre for pursuit of higher studies by the faculty members of other mining engineering institutions. It has also been given the status of a Centre of Advanced Studies by the University Grants Commission in recognition of its high standards of teaching, research and service to the mining industry.

The students passing out from this Department have traditionally occupied top positions in the government and in the mining industry, both in India and abroad. The posts of Director-General of Mines Safety, Controller-General, Indian Bureau of Mines, Chairman and Managing Director of most of the mining companies and top executives of many other companies, both in the public and private sector, have been traditionally occupied by the ex-students of the Department. Over 300 ex-students of ISM are working in the USA and other countries in highly respected positions.

VISION

Strengthening Education and Research in Major Field of Mining Engineering and Minor Fields of Underground Space Technology & Geomatic Engineering

MISSION

Upgradation of Mining Engineering Education to Meet the Challenges of the Mining Industry in terms of increase in production of Minerals from Opencast and Underground mines at competitive costs using newer technologies, keeping in view the Conservation & Environmental Protection, and also to develop the capabilities in Underground Space Technology & Geomatics

GOAL:

- Development and trial of appropriate technology for roof support and methods of mining for mechanized bord and pillar working.
- Development of a system to extinguish the existing mine fire and solving the mine ventilation and environmental problems at deeper horizons of the mines.
- Utilization/disposal of waste fly ash and slag as backfill in underground as well as opencast mines.
- Increasing productivity by adoption of appropriate mechanization of various mining operations.
- Developing a technology for reducing the cost of ventilation and transportation in deeper underground mines.
- Development of safe and economic technology for fast liquidation of standing pillars.
- Development of suitable technology for mining of virgin thick seams to ensure maximum extraction.
- Mechanized development and extraction of coal, by bord & pillar and longwall panels.
- Development of an appropriate technology and hydraulic support for mining of the standing pillars in underground coal mines.
- Development of guidelines for cavability assessment and estimation of support capacity for longwall mining.
- Development of testing facility for hydraulic supports and valves.

ACADEMIC ACTIVITIES

Existing Programmes

- (i) 4-year B.Tech Program in Mining Engineering.
- (ii) 2-year M.Tech Programmes in Opencast Mining, Mine Planning & Design, Rock Excavation Engineering and Mining Engineering.

Newly Approved M.Tech Programmes

- (i) Underground Space Technology.
- (ii) Geomatic Engineering.

It is proposed to start **5-year Integrated Courses leading to dual degrees of**

- B.Tech. (Mining Engineering) + MBA
- B.Tech. (Mining Engineering) + M.Tech. (Computer Applications)

Students seeking admission to the B.Tech and dual degree programmes have to qualify in the IIT-JEE, which is held every year at a large number of centers throughout the country.

Admission to the two years M.Tech programmes is made on the basis of GATE score and satisfactory performance in an interview, generally held in July every year. Candidates sponsored by Govt./Semi-Govt./Public Sector undertakings are also admitted to the M.Tech programmes and such sponsored candidates are not required to produce GATE score and are not eligible for scholarship. Candidates seeking admission to M.Tech programmes without GATE scores will have to qualify a written test conducted by the school followed by interview; however, they are not eligible for any scholarship.

The above courses aim at providing top quality education to the selected bright young students so that they may provide professional competence and effective leadership to the organizations they choose to serve.

Research Degrees

The Department of Mining Engineering also registers candidates for Ph.D. degree in Mining Engineering on a regular basis. D.Sc. Degree may also be awarded on evaluation of the published research work of a candidate.

CAREER PROSPECTS

The importance of mining can be judged from the fact that stages in the progress of mankind's culture have been designated by the products of mining: Paleolithic (Old Stone) Age, Neolithic (New Stone) Age, Bronze Age and Iron Age. Dependence of the human race on minerals will continue indefinitely and, in fact, technological progress will place increasing demand upon the mining industry to produce more and more minerals.

Students passing out from this Department find jobs readily with the companies engaged in the mining of coal, iron-ore, limestone, bauxite, copper, lead-zinc, gold, manganese, uranium and other minerals. Quite a few students, every year, opt for mine planning, computer applications, management, research and teaching jobs. The Professor-in-Charge of Training & Placement keeps in constant touch with the industry and helps the students in their final placements.

STATISTICS AT A GLANCE

No. of B. Tech Mining Engineering Graduated (1995 – 2004)

1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
83	32	26	42	32	67	67	33	29	36

M. Tech degree awarded (1995 – 2004)

Discipline	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Mining Engg.	1	-	1	-	1(BR)	1(BR)	4	1(BR)	-	-
OCM	4	7	-	4	8	3	3	5	-	7
MPD	2	-	1	3	6	-	-	-	-	6
REE	4	6	1	2	5	-	-	-	-	-

BR: By research

**No. of Ph.D. awarded in Mining Engineering: 15
(1996 – 2005)**

No. of DSc. awarded in Mining Engineering: 2

Current intake of B. Tech Mining Engineering Students

Semester	2002-2003	2003-2004	2004-2005	2005-2006
I/II	53	41	37	39
III/IV	24	41	39	33
V/VI	36	24	41	36
VII/VIII	28	36	24	41
Total	141	142	141	149

Placement statistics of B.Tech (Mining) students (2001 – 2006)

NAME OF COMPANY	2001	2002	2003	2004	2005	2006
ACC				02		
Atlas Copco (India) Ltd.	01		01			
BLA Industries				01		
BRAMCO W.L.L Bahrain		02				
HCL Softwares						05
Hutti Gold mines Company Ltd.		02				
IBM Softwares						03
ICI		02				
IISCO			07			
Infosys				06	04	07
Larsen & Toubro				01		
NMDC	11	10	06	10		
NTPC				02		
SAIL	02		10		07	17
Saurashtra Cement Ltd.		01				
Singareni Company Ltd.					01	
SRG Services & Consultancy Pvt. Ltd.		01				
Sterlite Group			04	01	03	06
TATA Martrade International Logistics Ltd.					02	
TISCO	04	04		06	05	03
Virtusa					01	
Total	18	22	28	33	23	41

OUR STRENGTH

FACULTIES

Name: Prof. Upendra K. Singh
Designation: Professor & HOD
Qualification: Ph.D. (Sweden)



Specialization: Underground Metal Mining, Rock Mechanics, Damage Mechanics, Numerical Modeling.

Title of Ph.D. Thesis: Simulation of the Progressive Failure of Brittle Rock

No. of Research Papers Published: International: 09, National: 08

Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5222/5279 (O) /2206396(O) 2206857(R)

Email: uksinghism@yahoo.co.in

Name: Prof. S.B. Srivastava
Designation: Professor
Qualification: Ph.D. IIT KGP



Specialization: Underground Metal Mining, Numerical Modeling in Mining, Mine & Mineral Economics, Applied Rock Mechanics, Marine Mining.

Title of Ph.D. Thesis: Investigations into the design of post-pillars in cut and fill method of mining.

No. of research Paper Published: 30 nos.

Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5217(O) /2207961(R)

Email: sbsri@yahoo.com

Name: Prof. D.C. Panigrahi
Designation: Professor
Qualification: Ph.D. (ISM)



Specialization: Mine Ventilation and sub-surface Environmental Engineering, Numerical Modeling of Work-place Environment, Innovative Mining Systems


Title of Ph.D. Thesis: Simulation of heat and moisture transfers in mechanized longwall faces of Indian Coal mines.

No. of Research Papers Published: International: 09 , National: 14

Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5235(O) /2206860(R)

Email: dc_panigrahi@yahoo.com


Name: Prof. M. Jawed
Designation: Professor
Qualification: Ph.D. (ISM)



Specialization: Mine Systems Engineering,
Underground Coal Mining. Mine Legislation and Safety.

Title of Ph.D. Thesis: Optimization of Coking Coal Mining System
No. of Research Paper Published: International: 2, National: 14
Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5237(O) 09431122638(R)
Email: profmjawed@yahoo.co.in

Name: Prof. Phalguni Sen
Designation: Professor
Qualification: Ph.D. (ISM)




Specialization: Analysis and design of surface mine slopes,
Planning and design of surface mines,
Surface mining operations and equipment performance,
Computer application in surface mining problems.

Title of Ph.D. Thesis: Computer Aided Design for Opencast Slope

No. of Research Paper Published: International: 02, National: 07
Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5238(O) /2206890(R)
Email: phalgunisen@yahoo.co.in

Name: Prof. Ravindra Nath
Designation: Professor (NMDC Chair)
Qualification: Ph.D. (BHU)




Specialization: Mine Planning, Rock Mechanics and Ground Control, Coal Mining

Title of Ph.D. Thesis: A study of Time Dependent Properties of Rocks.

No. of Research Paper Published: International: 03, National: 20
Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5240(O)
Email: rmathism@yahoo.com

Name: Dr. P. P. Bahuguna



Designation: Associate Professor
Qualification: Ph.D. (Roorkee)
Specialization: Mine Subsidence, Automation in Mine Surveying
Geodesy, Photogrammetry, and Astronomy

No. of Research Paper Published: International: 04, National: 11

Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5416(O) /2206657(R)
Email: pp_bahuguna@yahoo.co.uk

Name: Dr. V. M. S. R. Murthy
Designation: Associate Professor
Qualification: Ph.D. (ISM)



Specialization: Mechanized Rock Excavation, Drilling & Blasting, Mine Development and Construction, Mine supports, Tunneling & Underground space technology, Computer aided Mine Planning & Design.

Title of Ph.D. Thesis:

No. of Research Paper Published: International: 4 , National: 5

Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5445 (O) /2205286(R)
Email: vmsr_murthy@yahoo.com

Name: Shri P.K. Behera
Designation: Assistant Professor
Qualification: M.Tech (BHU)



Specialization: Rock Mechanics, Ground Control, Geotechnical Investigations.

Title of M.Tech. Thesis: Three Dimensional Study of Stopping Problem using Electrical Analogue Technique

No. of Research Paper Published: 38

Contact: Ph: 0326 (2210024-27)(PBX) Extn- 5413(O) /9835176018(R)
Email: beherapk@yahoo.com

Name: Dr. Dheeraj Kumar

Designation: Sr. Lecturer

Qualification: Ph.D. (IITKGP)



Specialization: Numerical Modeling, ERP, Computer Applications in Mining, Foundation Engineering, Rock Mechanics, and Explosive & Blasting

Title of Ph.D. Thesis: Experimental and FEM analysis of Floor Bearing Characteristics of Weak Coal Measure Strata

No. of Research Paper Published: 28

Contact: Ph: 0326 (2210024-27) (PBX) Extn- 5486 (O)/ 5586 (R)/ 99343402 (M)

Email: dheeraj@ismdhan.ac.in
Website: <http://dheeraj.95mb.com>

TECHNICAL STAFF

1. Shri P.K. Zamindar,	STA (Survey)
2. Shri B Munshi	STA (Rock Excavation)
3. Shri Sunil Kumar	STA (Survey)
4. Shri S. Sah	TA (Rock Mechanics)
5. Shri S. Rano	TA (Rock Mechanics)
6. Shri N.K. Hembrom	TA (Mine Ventilation and Environment)
7. Shri V.S. Kumar	DM
8. Shri Jyothi Gope	LA (Rock Mechanics)
9. Shri S.D. Mishra	LA (Rock Mechanics)
10. Shri Sashi Gope	LA (Survey)
11. Shri Bijay Koranga	LA (Mine Ventilation and Environment)
12. Shri Gopal Bid	LA (Survey)
13. Shri Asim Upadhayay	LA (Rock Excavation)

NON - TECHNICAL STAFF

1. Shri Haresh Rajak	PA to HOD
2. Shri D. D. Mondal	UDC
3. Shri R. P. Singh	UDC
4. Shri Mantu Turi	Peon
5. Shri Santosh Koranga	Peon

DEPARTMENTAL FACILITIES

Rock Mechanics Laboratory

- **Material Testing System (MTS), (100 tones)** the electro- hydraulic stiff testing machine is used for testing the various physico-mechanical properties of rocks under different conditions of loading.
- **Compression testing machine (600 tones)** is used for determining various strength parameters of rocks and for testing of mine supports, including hydraulic legs for longwall support.
- **Transducers and Sensors:** High precision Load Cells, Pressure transmitters, Pressure transducers, strain gauges and LVDTs. They are invariably used with on-line PC based Data Acquisition System for recording test parameters.
- **PC Based Data Acquisition System,** a state of the art 8-channel Data Acquisition system with sampling rate of 9999 samples per second for on-line acquisition of test data like strain, displacement, pressure, load, temperature, etc. This is used invariably in all the lab experiments.
- **MINIFRAC** for determining the in-situ stresses in rockmass by hydro-fracturing technique.
- **A special setup developed** for characterizing rock for selection of Tunnel Boring Machines.
- **Hydraulic Leg Testing facilities,** a facility for testing Powered Roof Support for Longwall mining. This is approved by DGMS.



Fig. 1: 600 Tonne leg testing machine approved by DGMS

The laboratory has soil testing facilities, machines for drilling, cutting and polishing of rock samples, extensometers, convergence recorders, equipments for determining cuttability, drillability, abrasivity, friability, weatherability, empirical strength indices and other properties of rocks.

Rock Excavation Laboratory

- **High speed video camera**, for study of mechanics of rock fragmentation and movement of rock mass and projectiles.
- **Fragblast softwares**, for rock fragmentation and distribution analysis using the digital images acquired by a video camera.
- **Vibration recorders and sophisticated chip based micro seismographs**, to record blast vibration levels and analysis for peak particle velocity, dominant frequency, FFT analysis and safe vibration levels.
- **VOD probe**, for measuring velocity of detonation of explosives inside a blast hole.
- **Digital storage oscilloscope** along with borehole pressure transducer, for recording detonation pressure inside blast holes.
- **Cerchar hardness apparatus**, for estimation of drilling parameters and machine specification from small rock samples.
- **Sequential blasting machine**, for providing very precise and wide range of delays in blasting circuits.
- **Near- field acceleration measuring setup**, for understanding rock-explosive interaction for blast damage assessment.

Mine Ventilation and Environment Laboratory

- **Precise instruments**, for carrying out pressure – quantity surveys in mines.
- **Experimental set up**, for studying methane emission from coal seams.
- **Quick thermal conductivity meter**, to measure the thermal conductivity of rocks.
- **Real time aerosol monitor, gravimetric dust sampler, personal dust sampler, Konimeter with projector**, for studying the air borne respirable dust concentration in mine air.



Fig .2 : Gas Chromatograph and CPT chamber

- **Digital sound level meter with recorder**, for studying noise levels in mines and mining areas.
- **Facilities** for studying CPT and IPT, SZ index and U index for finding the susceptibility of coal to spontaneous heating.
- **Experimental set-up**, to study coal-dust explosion hazard.
- **Microprocessor based Gas Chromatograph System**, for detection and measurement of different gases in the mine air.
- **Mine ventilation computation laboratory**, for computation of ventilation problems, is a part of the Mine Ventilation and Environment Laboratory.

Survey Laboratory

- **Electronic total station**, for all types of spot surveying with high speed and accuracy.
- **Gyro theodolite**, for determination of true North.
- **Laser eyepiece**, for correlation survey.
- **Micro-optic theodolites, precise levels and other instruments**, for all types of surveying and leveling.
- **Global Positioning System (GPS)**
- **Mine surveying computation laboratory** forms a part of the Survey Laboratory.
- **Digitiser and plotter** for development of survey plans.
- **GIS Softwares**, for extracting and processing the information from mine plans and to update them with the latest information.



Fig. 3: State of the art surveying instruments

Mine Systems Laboratory

A large number of stand-alone PCs with LAN and internet connections loaded with mining related softwares to allow students to gain hands-on experience of solving the problems assigned to them and for developing problem specific solution programs.

CAMPAD Laboratory

- **SURPAC Vision 5 Mine Planning Software** package, for mine planning and design.
- **Multi-media computer system**, for development of computer based training packages.
- **GRAFEX, VIBAN, VENTSYS** and good number softwares developed in-house.

Numerical Modeling Laboratory

The Numerical Modeling Laboratory is having several Pentium IV multimedia PCs connected to a high performance server.

The following softwares are available in the Numerical Modeling lab for mine design and numerical simulations of geo-mining problems:

- **Strand – 7 (version 2.3.6) finite Element Package**, for solving 2-D & 3-D linear and non-linear static and dynamic problems.
- **FLAC – 2D software (Version 4.0)**, Finite difference software for solving linear and non-linear and support problem of excavations in rock.

RESEARCH ACTIVITIES

Significant researches have been carried out in the areas of rock mechanics, ground control, mining methods, stability of slope and waste dumps, mine ventilation, mine fire, rock fragmentation by blasting, explosives performance, drillability of rocks, substitutes of explosives, slurry transportation in pipelines, underground and surface mine environment, and mines safety. A large number of research papers have been published in national and international journals. Outcomes of the research work have significant impact on mining and allied industries.

It is significant to note that the Department undertook shaft pillar stabilization at Mudidihi Colliery of BCCL, and was successful in its efforts. The Department has also successfully closed the water flow through the fissures in a coalmine of BCCL, and saved several lakhs of rupees worth of power being consumed in pumping. There are many more such laurels, which the Department has brought to the credit of the School through its R&D efforts.

ONGOING AND COMPLETED R & D PROJECTS

ONGOING R&D PROJECTS

Project Title: Development of Smart MEMS gas sensor for improvement of the safety of mines.
Project value: Rs.38.8 lakhs (Jointly with Jadavpur University; IIT, Kharagpur; and B.E. College, Sibpur)
Sponsoring Agency: All India Council for Technical Education
Project Coordinator (ISM-part): Prof. D. C. Panigrahi

Project Title: Development of Model for Assessment of Blast Induced Damage/Hazards and Formulation of Design Guidelines for Controlled Dragline Blasts in Indian coal Measure Rocks.
Project value: Rs.7.00 Lakhs
Sponsoring Agency: MHRD, Govt. of India
Project Coordinators: Dr. A. K. Mishra, AP, & Prof. P. Sen, ME.

Project Title: Development of a computer based Mine Information System (MIS) to provide up-to-date database for an opencast mine.
Project value: Rs.16.00 lakhs.
Sponsoring agency: MHRD, Govt. of India
Project Coordinator: Dr. P. P. Bahuguna.

Project Title: Development of a setup for stress measurement in concrete tunnel lining dam walls and pillars.
Project value: Rs. 15.22 lakhs
Sponsoring Agency: MHRD, Govt. of India
Project Coordinators: Prof. Upendra K. Singh & Dr. Dheeraj Kumar

Project title: Investigations of cavability of overlying strata and development of guidelines for estimation of support capacity for longwall faces.
Project value: 465.8 lakhs (Jointly with CMRI & NIRM)
Sponsoring Agency: Coal S & T Project under CMPDIL
Project Coordinator (ISM-part): Prof. U. K. Singh

Project title:	Investigations and modeling studies for classification of coal seams with respect to their proneness to spontaneous combustion for improvement of safety in mines.
Project value:	Rs. 10 lakhs
Sponsoring Agency:	MHRD, Govt. of India.
Project Coordinator:	Prof. D. C. Panigrahi.

R & D PROJECTS COMPLETED DURING LAST 5 YEARS

- A study of air-borne respirable dust concentration at work places in chromite mines of Sukinda Belt, Orissa.
- Development of predictive models for blast induced rock damage (BIRD), optimum pull and maximum charge per delay for safe and rapid excavation of mines and tunnels.
- Studies on problems of spontaneous heating in coal pillars and development of techniques for its prevention, early detection and control.
- Study of the possibility of utilizing industrial solid wastes and fly ash for backfilling and reclamation in opencast mines.
- Establishment of a numerical modeling laboratory in the Department of Mining Engineering.
- Trial of Fiber Reinforced Shotcrete-Bolt Support System in an Underground Gallery in Coal Subjected to High Induced Stresses (MT-127).
- Development of a new rock characterization methodology for optimizing support requirement in tunnels/mines.

TOTAL PROJECT VALUE 101.734 LAC

SERVICES TO INDUSTRY

CONSULTANCY

The Department has been helping the industry with its expertise in solving technical problems. Consultancy services have been rendered in the areas of planning surface and underground mines, design of surface and underground excavations, slopes in opencast mines and spoil dumps for long term stability, design of support systems for Bord and Pillar and Longwall workings, prediction of surface subsidence due to underground coal extraction, computer-aided planning of ventilation systems, blast design, ground vibrations and ground stability, precise surveying for mine planning, environmentally benign mine designs, rock characterization for TBM selection. The department has been involved in a big way in the consultancy services rendered to the mining industry in solving their mine surveying problems like correlation survey, depth measurement, measurement of volumes, and connection of colliery survey to National Grid etc. Recently the Department provided a technical consultancy to CBI in the field of surveying. It is significant to note that the Department undertook shaft pillar stabilization at Mudidih Colliery of BCCL, and was successful in its efforts. Some of the difficult problems of ventilation and mine environment in deep mines have been successfully solved. Some our clients are **CIL** and its **subsidiaries, TISCO, SCCL, UCIL, HGML, NTPC, NHPC, MOIL, IISCO.**

TESTING SERVICES

Testing of coal and rocks, mine supports, construction materials, mine gases, etc., is done on a regular basis in the laboratories of the Department. The laboratories have facilities for determination of almost all the properties that are required for planning and operation of mines and these facilities are used extensively by the industry.

The Department has recently developed a facility for testing of Hydraulic legs for Longwall support. This is a unique facility in the country. Further development of the facility for testing of valves and full Longwall support, is in progress. A setup of rock characterization for selection of TBM (tunnel bore machines) in the Department is only facility in India. We are adding a unique facility of artificial lung machine and related setup for simulation of rescue operations in mines.

Note: ISO 9001 Certification of all the Laboratories of the department is in progress.

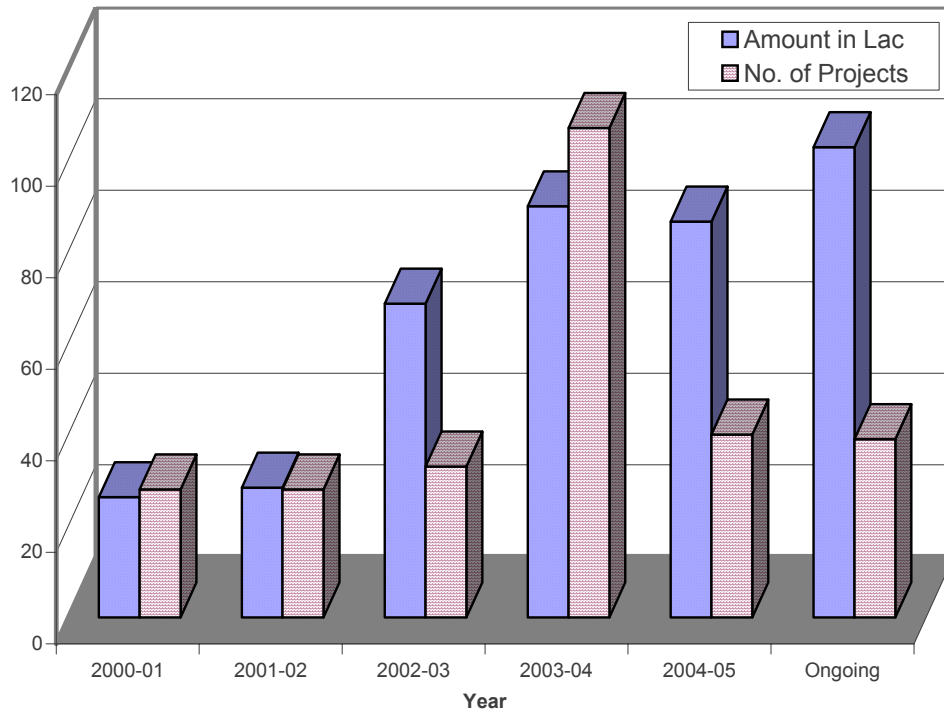


Fig 4: Department of Mining Engineering, ISM, Dhanbad Earning During 2000 - Till Date from services to industry

EXECUTIVE DEVELOPMENT PROGRAMME

Continuing Education Programmes of the Department are designed with careful planning and research support. The programmes attempt to help in-service executives in updating their knowledge & know how and upgrading their skill. Most of the programmes are conducted in-campus, but occasionally off-campus programmes in specific subject areas, are also organized at the request of the client organizations.

Coal India Ltd., has prescribed the Department's six-week programme in Mine Surveying as an essential requirement for its Surveyors, for promotion beyond a certain level. The programmes in coal mining technology, applied rock mechanics, mine environmental engineering, mine legislation and safety, surface mining etc. are quite popular.

The Department has been conducting the short-term courses for executives in the following major areas:

- Rock Mechanics
- 6-weeks Intensive Course on Advances in Mine Surveying Technology' for Survey Executive for CIL and its subsidiaries, and other coal companies such as BCCL, MCL, SECL, CCL, WCL, ECL, SCCL,
- Mine Safety and Legislation
- Mechanized Tunneling for the executives of NTPC
- Professional skill development programme for Mining Executives of Jharkhand Govt.

SEMINAR, SYMPOSIUM and WORKSHOP

The Department pioneered the organization of "National Seminar on Surface Mining" in the country every three years to highlight the developments that have taken place during the period. Five such seminars have already been held so far, the first four at ISM Dhanbad. The next one is also likely to be held at ISM, Dhanbad.

The Department organized the International Mine Ventilation and Environment symposium in 2001.

The Department is organizing a National Seminar on "Underground Metal Mining- Status and Prospects (UMMSP – 2006) on 13-14 February 2006 at ISM Dhanbad.

Beside these, the Department has been conducting other National/International Symposia/ Seminars/Workshops/Conferences on topical issues from time to time. It is a matter of pride for the School that on the basis of the international bid submitted by the Indian School of Mines, Dhanbad, the International Mine Ventilation Congress Committee in its meeting on July 6, 2005 in Brisbane, Australia, awarded ISM the hosting of the Ninth International Mine Ventilation Congress (IMVC) to India in 2009, for which the competition was very tough, the other competitors were China and Canada.

INTERNATIONAL COLLABORATION

The Department has established close links with the Department of Mining Engineering at the University of Nottingham, UK, Department of Mineral Engineering at Pennsylvania State University, USA, Academy of Mining & Metallurgy at Cracow in Poland, Shandong Institute of Mining and Technology in China, University of South Australia, in Australia, Ecole Des Mines De Paris (France), Southern Illinois University at Carbondale (SIUC), USA, Virginia Polytechnic Institute and State University, Virginia, USA, Colorado School of Mines, Golden, Colorado, USA. Such collaborations have helped in improving the quality of academic activities, have allowed exchange of faculty, and have contributed in wider dissemination of knowledge, transcending the geographical boundaries of nations.

AWARD AND LAURELS

1. Prof. U. K. Singh is a UGC nominee of the Advisory/Administrative Committee of DSA Pase-III, Department of Civil Engineering, Jadavpur University, Kolkata.
2. Prof. U. K. Singh is nominated as Member of assessment committee constituted in the area of Material Science and Engineering by CSIR, New Delhi.
3. Prof. U. K. Singh is nominated referee of International Journal of Damage Mechanics, published by SAGE Publications Ltd. London.
4. Prof. U. K. Singh is nominated referee of International Journal of Environment, Development and Sustainability, published by Springer, the Netherlands.
5. Prof. U. K. Singh is a member of Editorial Board of International Journal of Damage Mechanics, published by SAGE Publications Ltd. London.
6. Prof. D. C. Panigrahi was conferred the 'ASPIRE' recognition by Tata Iron and Steel Company Ltd. In 2005 for successfully improving workplace environment in one of their deep coalmines at 650m depth.
7. Dr. M. Jawed, Professor, selected as Member of the Peer Review Committee for National Institute of Rock Mechanics Champion Reefs, P.O: Kolar Gold Field, Karnataka.

8. Dr. M. Jawed, Professor, Visited "Rajiv Gandhi College of Engg, Research & Technology, Chandrapur" on 3-5 Sept. 2004 as Member of Expert Committee for assessment of quality and accreditation, Setup by NBA (New Delhi).
9. Dr. P. P. Bahuguna won the best paper awards in 'Indian Surveyor' from the institutions of Surveyors, New Delhi.
10. Dr. P. P. Bahuguna, Associate Professor, Won an award by the Institution of Surveyors (India) for best paper in Mine Surveying division.
11. Dr. V. M. S. R. Murthy selected as a committee member for Project Fellow Selection in CMRI, Dhanbad.
12. Dr. Dheeraj Kumar received the "Hindustan Zinc Limited Gold Medal " by the Institution of Engineers (INDIA) for the best technical research paper in the year 2002

PATENTS

- o Singh, U. K. and Mishra, R. C., Development of Steel Fibre making Machine, vide patent no. 193510 (1778/Cal/96) dated 9/10/1996

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- o Bahuguna, P.P. and Bhawani Singh, Guidelines for the Prediction of Subsidence in Single Seam; Coal Mines, Bureau of Indian Standards. Publication No. IS15180: 2002, September, 2002

DISTINGUISHED VISITORS TO THE SCHOOL

Vladimir V. Mankanov, Head of underground construction department of FESTU, Vladivostek, Russia.	Visited the department of Mining Engg. on 10.05.04
Dr. V. P. Dimri, Director, NGRI, Hyderabad.	Visited the department of Mining Engg. on 01.10.04
Shri G. C. Mrig, ISM Alumni (1958)	Visited the department of Mining Engg. on 06.01.05
Dr. N. R. Banerjee, VC, BESU, Shibpur Howrah	Visited the department of Mining Engg. on 3.3.05
Mr. Scott Cathniess, Group Head, Exploration, Vedanta Group of Companies	Visited the department of Mining Engg. on 18.11.2005 to deliver a guest lecture.
Prof. S. P. Banerjee, Former Act. Director, ISM Dhanbad	Visited the department of Mining Engineering on 06.01.2006 to deliver Dr. D. N. Prasad Memorial Lecture.