

CURRICULAM – VITAE OF PROF. PHALGUNI SEN

PERSONAL DETAILS :

Name : Phalguni Sen
Father's Name : Shri Madan Mohan Sen
Date of Birth : 21st February 1953
Nationality : Indian
Designation : Professor
Permanent Address : C/o Shri Madan Mohan Sen
Vill. – Biraty, PO. – Harinkhola – 713415
Dist. – Hooghly, West Bengal
Present Address : Department of Mining Engineering
Indian School of Mines
Dhanbad – 826004, Jharkhand
e-mail : phalgunisen@yahoo.co.in
Marital Status : Married

EDUCATIONAL / PROFESSIONAL QUALIFICATIONS :

Degree/ Examination	University/ Institution	Subjects/ Fields	Year	Division/ Class	Remarks
H.S	R.K.M Vidyalaya Narendrapur, W.B	Science Stream	1969	1 st	
B.Sc (Hons)	University of Calcutta	Physics	1972	2 nd	
B.Tech.	Indian School of Mines, Dhanbad	Mining Engineering	1978	1 st	1 st Class Seventh
M.Tech.	Indian School of Mines, Dhanbad	Opencast Mining	1984-85	1 st	1 st Class First Gold Medallist
Ph.D.	Indian School of Mines, Dhanbad	Mining Engineering	1994-95		
F.C.C. (Coal)	D.G.M.S., Govt. of India		1982-83		

Thesis Title :

- M.Tech. : Detailed Mine Planning for a Hilly Iron Ore Deposit
- Ph.D. : Computer Aided Design of Openpit Slopes

RESEARCH / WORK EXPERIENCE :

Organisation	Designation	Duration	Nature of Work
TISCO Ltd., Collieries Division, Jamadoba	Graduate Trainee	Jan. 1979 to Dec 1980	On the job training
TISCO Ltd., Collieries Division, Jamadoba	Assistant Manager	Jan. 1981 to Sept. 1982	Management
Indian School of Mines, Dhanbad	Research Associate	May 1986 to Mar. 1987	Research
Indian School of Mines, Dhanbad	Assistant Professor	Mar. 1987 to Sept. 1998	Teaching, Research and Consultancy
Indian School of Mines, Dhanbad	Professor	Sept. 1998 to till date	Teaching, Research and Consultancy

PROFESSIONAL AFFILIATIONS :

- Life Member of Institution of Engineers (India)
- Life Member of Mining Engineers Association of India
- Life Member of Indian Society for Technical Education

FIELD OF SPECIALISATION / INTEREST :

- Analysis and Design of Slopes in Surface Mines
- Surface Mine Planning and Design
- Surface Mining Operations
- Computer Applications in Surface Mining Problems

RESEARCH GUIDANCE AT MASTERS LEVEL :**M. Tech by Research :**

1. "Openpit slope stability analysis – a computerised model" – P. K. Paul (1990).
2. "Detailed planning of a hilly iron ore deposit" – Abhijit Bhattacharya (1998).

M. Tech by Course :

1. "Fires in surface coal mines" – P. K. Raychowdhury ((1991).
2. "Optimization of openpit mine parameters – a geostatistical approach" – A. K. Saha (1991) – *Joint guidance with Dr. B.C.Sarkar (AGL).*
3. Environmental impact due to surface coal mining with special reference to Wardha Valley Coalfield – a study" – K. Chakraborty (1992).

4. Techno-economics of operating surface coal mines in SECL – a study” – P. Srivastava (1993).
5. “A study of HEMM performance in surface coal mines extracting developed coal seams” – S. K. Srivastava (1993)
6. “Extraction of improved quality coal from banded seams vis-à-vis application of continuous surface miners” – M. satyamurthy (1993).
7. “Application of reliability indices in surface coal mine production performance assessment” – Rakesh Behari Roy (1993) – *Joint guidance with Dr. K. Kumar (E&I)*.
8. “A study on reclamation planning for surface coal mines worked by conventional shovel – dumper system with a case example of Khoodia Opencast Project” – V. P. Mehndiratta (1993) – *Joint guidance with Dr. I.N.Sinha (CME)*.
9. “Performance and economics of continuous surface miner in Indian limestone mines – case studies” – S. S. Kolettiwar (1995).
10. “Characterisation of noise pollution status in surface coal mines in Jharia Coalfield – case studies” – M. F. Hussain (1997) – *Joint guidance with Dr. A.K.Pal (CME)*.
11. “A computer model for analysis and design of waste dumps – a neural network approach” – Neeraj Kumar (1997).
12. “Computer aided analysis and design of spoil dumps retained by coal ribs left in-situ” – Arun Kumar (1997).
13. “Analysis of environmental management practices in an iron ore mine in Orissa” – S. C. Nayak (1997) – *Joint guidance with Dr. A.K.Pal (CME)*.
14. “Tech-economic analysis of input crushing and conveying system in a large surface coal mine – a case study” – Rahul Srivastave (1998).
15. “Dimensional Granite mining in Southern India – a study” – C. Shanmugam (1998).
16. “Study of performance of Heavy Earth Moving Machinery in a lead-zinc mine” – Vinod Kumar (1998).
17. “Study of frictional parameters of mixed material” – R. K. Dewangan (1998) – *Joint guidance with Shri P.K.Behera (ME)*
18. “Model free estimation of optimum burden in production blasts – a neural network approach” – R. K. Jade (1998).
19. “Determination of critical slip circle vis-à-vis factor of safety of a dry slope formed by homogeneous cohesive frictional material” – S.K.Tamrakar (1998).
20. “Performance analysis of continuous surface miner in Indian surface coal mine – a case study” – Kaushik Dey (1999).
21. “Feasibility study for the application of continuous surface miner in Indian Opencast Coal Mine” – Prashant (1999).
22. “Influence of fragmentation on loading machine performance” – Arbind Kumar (2000) – *Joint guidance with Dr. A.K.Mishra (ME)*.
23. “Development of a model for estimation of frictional parameters in case of sand-clay mixed material” – Afroz Alam (2001) – *Joint guidance with Dr.N.C. Karmakar (ME)*.
24. “Development of a computer model for determination of cut-off grade in metalliferous deposits” – Brijesh Mishra (2004) - *Joint guidance with Dr.C.Bhar (DMS)*.
25. “A study of present blasting practices in dragline benches for improving the blasting efficiency” – P. Balamadeswaran (2004) - *Joint guidance with Dr. A.K.Mishra (ME)*.

26. "Determination of critical slip circle for a homogeneous soil slope under different ground water conditions", - S.P.Sharma (2004).
27. "Devising appropriate strategy for ensuring environmentally sustainable mine closure in India", - Chittaranjan Mahapatra (2005) - *Joint guidance with Dr.I.N.Sinha (CME)*.
28. "Development of a model for blast design using ANN (Artificial Neural Network)", - S.V.Ramteke (2005) - *Joint guidance with Dr. A.K.Mishra (ME)*.
29. "Reorganisational planning for expansion of an operating surface coal mine in a fragile environment", - Pramod Kumar (2005) - *Joint guidance with Shri Achyuta Krishna Ghose (CMRI)*.
30. "Development of ultimate pit configuration for metalliferrous deposit", - Supriyo Sengupta (2005).

EXTERNAL PAPER-SETTER AND EXAMINERSHIP :

- a. Indian Institute of Technology, Kharagpur (2002-03 – M.Tech.(ME) Dissertation & Viva-voce)
- b. Kakatiya University, Warangal (1996-97 and 2003-04 – B.Tech (ME))
- c. Jai Narain Vyas University, Jodhpur (1996-97 – B.E (ME))
- d. B.I.T., Sindri (1993-94 and 1994-95 – B.Sc.Engg.(ME))

SPONSORED RESEARCH AND CONSULTANCY PROJECTS :

Research Projects :

Project title	Sponsored by	Responsibility	Status
Computerised Mine Planning for Opencast coal mines	Department of coal (under S & T Plan)	Team member	Completed in 1992
Development of a model for assessment of blast induced damage/hazards and formulation of design guidelines for controlled dragline blasts in Indian coal measure rocks	M.H.R.D., Govt. of India	Co-investigator	Ongoing

Consultancy Projects :

Project title	Sponsored by	Responsibility	Status
Slope Stability Studies at Piparwar Opencast Project	C.C.L, Ranchi	Co-investigator	Completed in 1993
Waste Dump Stability Studies at Jhamarkotra Rock Phosphate Mine	RSMM Ltd., Udaipur	Co-investigator	Completed in 1995
Study of Safety of External Overburden Dumps in 25 Opencast Projects in different Subsidiary	Coal India Ltd., (World Bank Assisted),	Co-ordinator	Completed in 1996

Company of Coal India Ltd.	Calcutta		
Dump Slope Studies at Jayant Opencast Project	NCL, Singrauli	Co-investigator	Completed in 1997
Dump Slope Studies at Kusmunda Opencast Project	SECL, Bilaspur	Co-investigator	Completed in 1997
Preparation of Training Modules and Training of Environmental Personnel	Coal India Ltd. (World Bank Assisted), Calcutta	Team member	Completed in 2003
Off-Campus Course on “Some Aspects of Surface mining”	UCIL, Jaduguda	Co-ordinator	Completed in 2004

SHORT COURSES OFFERED :

Course Title	Held At	Period	Role & No. of Sessions engaged
Opencast Mining	ISM	08 –13 June 1987	Course Faculty - 4 Sessions
Selection of Openpit Equipment	ISM	29 Aug. – 03 Sept. 1988	Course Faculty - 1 Session
Opencast Mining	Ranchi, CCL	26 June – 01 July 1989	Course Faculty - 3 Sessions
Opencast Mining	Chandrapur, Wani Area, WCL	17 – 19 Aug. 1989	Course Faculty - 3 Sessions
EDP on Intensive Course on Advances in Mine Surveying Technology	ISM	01 Mar. – 10 Apr. 1993	Course Faculty - 6 Sessions
EDP on Mine Legislation & Safety	ISM	04 – 09 Oct. 1993	Course Faculty - 1 Session
Course Title	Held At	Period	Role & No. of Sessions engaged
Environment Protection and Improvement	ISM	04 July – 13 Aug. 1994	Course Faculty - 2 Sessions
Academic Staff College Programme Refresher Course on Mineral Exploration	ISM	08 – 27 Jan. 1996	Course Faculty - 1 Session

EDP on Environmental protection in Mining Areas for the Executives of Coal India Ltd.	ISM	16 June – 13 Sept. 1997	Course Faculty - 2 Sessions
Training of Environmental Personnel for Executives E1 – E5 of Coal India Ltd. Under CIL's World Bank Project	ISM	06 July – 15 Aug. 1998	Course Faculty - 2 Sessions
Training of Environmental Personnel for Executives M1 – M3 of Coal India Ltd. Under CIL's World Bank Project	ISM	31 Aug. – 26 Sept. 1998	Course Faculty - 1 Session
Training of Environmental Personnel for Executives E1 – E5 of Coal India Ltd. Under CIL's World Bank Project	ISM	26 Oct. – 21 Nov. 1998	Course Faculty - 2 Sessions
Training of Environmental Personnel for Executives E1 – E5 of Coal India Ltd. Under CIL's World Bank Project	ISM	30 Nov. 1998 – 09 Jan. 1999	Course Faculty - 2 Sessions
Training of Environmental Personnel for Executives E1 – E5 of Coal India Ltd. Under CIL's World Bank Project	ISM	18 Jan. – 13 Feb. 1999	Course Faculty - 2 Sessions
Training of Environmental Personnel for Executives M1 – M3 of Coal India Ltd. Under CIL's World Bank Project	ISM	15 – 27 Feb. & 26 Apr. – 08 May 1999	Course Faculty - 1 Session
Training of Environmental Personnel for Executives E1 – E5 of Coal India Ltd. Under CIL's World Bank Project	ISM	08 – 20 Mar. & 21 Jun – 03 July 1999	Course Faculty - 2 Sessions
Course Title	Held At	Period	Role & No. of Sessions engaged
Training of Environmental Personnel for Executives E1 – E5 of Coal India Ltd. Under CIL's World Bank Project	ISM	29 Mar – 17 Apr. & 12 – 31 July 1999	Course Faculty - 2 Sessions
Training of Environmental Personnel for Executives M1 – M3 of Coal India Ltd. Under CIL's World Bank Project	ISM	26 July – 21 Aug. 1999	Course Faculty - 1 Session

Training of Environmental Personnel for Executives E1 – E5 of Coal India Ltd. Under CIL's World Bank Project	ISM	13 Sept. – 23 Oct. 1999	Course Faculty - 2 Sessions
Refresher Training of Executives (E1 – E5) already trained	IICM, Ranchi	20 Dec. 1999 – 01 Jan. 2000	Course Faculty - 2 Sessions
First Training of Existing Personnel (E1 – E5) of CIL	ISM	10 – 22 Jan., 21 Feb. – 04 Mar & 03 – 15 Apr. 2000	Course Faculty - 2 Sessions
Special Course for MCL Executives on Mine Management, Legislation & General Safety	ISM	15 – 25 Mar. 2000	Course Faculty - 4 Sessions
Training Programme for CIL Executives E1 – E5	ISM	24 Apr.- 06 May & 05 – 17 June 2000	Course Faculty - 2 Sessions
Executive Development Short Course on Geostatistics in Mineral Industry	ISM	24 – 28 Sept. 2001	Course Faculty - 1 Session
Environmental Management Capacity Building Technical Assistance (EMCBTA) Project: Mining Subcomponent: Activity II B: Task I Training	ISM	17 June – 26 July 2002	Course Faculty - 4 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	01 – 10 Oct. 2002	Course Coordinator & Course Faculty - 3 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	17 – 26 Oct. 2002	Course Coordinator & Course Faculty - 3 Sessions
Special Course for MCL Executives on Wining and Working	ISM	28 Oct. – 02 Nov. 2002	Course Faculty - 2 Sessions
Course Title	Held At	Period	Role & No. of Sessions engaged
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	07 – 16 Nov. 2002	Course Faculty - 3 Sessions
Advances in Mine Surveying Technology	ISM	21 Oct. – 30 Nov. 2002	Course Faculty - 2 Sessions
Environmental Management Capacity Building Technical	ISM	18 Nov. – 26 Dec. 2002	Course Faculty - 4 Sessions

Assistance (EMCBTA) Project: Mining Subcomponent: Activity II B: Task I Training			
Advances in Mine Surveying Technology	ISM	20 Jan. – 01 Mar. 2003	Course Faculty - 2 Sessions
Surface Mining for TISCO Executives	ISM	14 – 18 Apr. 2003	Course Coordinator & Course Faculty - 10 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	01 – 12 Sept. 2003	Course Coordinator & Course Faculty - 11 Sessions
Special Course for MCL Executives on Wining and Working	ISM	15 – 20 Sept. 2003	Course Faculty - 2 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	12 – 24 Oct. 2003	Course Coordinator & Course Faculty - 5 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	16 – 28 Nov. 2003	Course Faculty - 5 Sessions
Some Aspects of Surface mining	Narwapahar, UCIL	24 – 25 Apr. 2004	Course Coordinator & Course Faculty - 4 Sessions
Course for HZL Executives on Mining for Non-Mining Executives - 2 Groups	ISM	21 July – 01 Aug. 2004	Course Faculty - 6 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	30 Aug. – 10 Sept.. 2004	Course Coordinator & Course Faculty - 6 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	13 – 24 Sept. 2004	Course Coordinator & Course Faculty - 14 Sessions
Course Title	Held At	Period	Role & No. of Sessions engaged
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	27 Sept. – 08 Oct. 2004	Course Faculty - 10 Sessions
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	12 – 24 Oct. 2004	Course Coordinator & Course Faculty - 5 Sessions

Advances in Mine Surveying Technology	ISM	20 Jun. – 30 Jul. 2005	Course Faculty - 1 Session
Training Programme for Mining Inspectors, Dept. of Mines & Geology, Govt. of Jharkhand	ISM	16 Aug. – 22 Aug. 2005	Course Faculty - 2 Sessions
Training Programme for Mining Inspectors, Dept. of Mines & Geology, Govt. of Jharkhand	ISM	23 Aug. – 29 Aug. 2005	Course Faculty - 2 Sessions
Mechanized Tunelling for NTPC Executives	ISM	05 Sep. – 17 Sep. 2005	Course Faculty - 2 Sessions
Advances in Mine Surveying Technology	ISM	29 Aug. – 08 Oct. 2005	Course Faculty - 1 Session
Special Course for MCL Executives on Mine Management, Legislation & Safety	ISM	21 – 30 Nov. 2005	Course Faculty - 2 Sessions

OTHER RELEVANT INFORMATION :

- Coordinating M.Tech (Opencast Mining) Programme of Deptt. of Mining Engineering, I.S.M. since 1989.
- Reviewer of technical papers for the Journal of IE (Mining Division) since Sept 2000.
- Reviewer of technical papers for the Journal of Scientific & Industrial Research since Aug. 2003.