

# BRIEF CV OF PROF. SUBODH KUMAR MAITI

1. Name: Prof. **SUBODH KUMAR MAITI**
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3. Date of Birth: April 24,1960

## 4. Educational Qualifications

Degree	Year	Universities	Specialization
Ph.D	1995	IIT (ISM), Dhanbad.	Environmental Sc. and Eng.
M.Tech	1986	IIT, Mumbai	Environmental Sc. and Eng.
M.Sc	1984	Calcutta University	Botany (Sp- Microbiology)
B.Sc (Hons)	1981	Calcutta University	Botany (Hons), Zoology , Human Physiology

Ph.D topic “*Ecological aspects of reclamation in Jharia coalfield, BCCL, India.* (Guide: Prof S. P. Banerjee)

M.Tech: Sewage treatment by activated algae in an Oxidation ditch (Guide: Prof SK Gupta)

**Specialization:** Restoration Ecology; Carbon Sequestration, Biodiversity conservation; Soil conservation; Fly ash management; Bioremediation of metallic waste, Environmental Microbiology; Biological Waste Water Treatment, EIA & Auditing.

## 5. FELLOWSHIP/ HONOURS AND AWARDS

- 1) **2017:** Received Honorary Research Fellow appointment in the International Centre on Land Reclamation and Ecological Restoration for Mining areas at **China University on Mining & Technology- Beijing** for 3 years (21 Oct 2017 to Oct 20 2020).
- 2) **2016: Received The Inder Mohan Thapar Foundation (IMFT) Research award for Publication – 2016** in recognition of excellence in Resarch publications based on impact factor of the SCI indexed journals during the Calender year – 2016 from IIT (ISM), Dhanbad.
- 3) **2016: Received Canara Bank Research Publication Award – 2016 for Department of Environmental Science & Engineering** in recognition of his excellence in Resarch publications based on cumulative impact factor of the SCI/SCIE/SSCI indexed journals during the Calender year 2013– 2016 from IIT (ISM), Dhanbad.
- 4) **2015: Received Canara Bank Research Publication Award – 2015 for Department of Environmental Science & Engineering** in recognition of his excellence in Resarch publications based on cumulative impact factor of the SCI/SCIE/SSCI indexed journals during the Calender year 2012– 2015 from IIT (ISM), Dhanbad.
- 5) **2014: Received Canara Bank Research Publication Award – 2014 for Department of Environmental Science & Engineering** in recognition of his excellence in Resarch publications

based on cumulative impact factor of the SCI/SCIE/SSCI indexed journals during the Calendar year 2011– 2014 from IIT (ISM), Dhanbad.

- 6) **2015: QCI** – Empanelled expert on Ecology & Biodiversity (EB) and Soil conservation (SC) for CMPDIL, Ranchi since 2015.
- 7) **2006:** Visiting lecturer at the Dept of Mining and Mineral Engineering to teach Env't Engineering papers for B.Tech students, University of Unitech, Lae, Papua New Guinea
- 8) **2005:** Received MGMI Institute GOLD medal in 2006 for best research paper “Maiti, S.K. (2006). Ecorestoration of coalmine OB dumps – with special emphasis on tree species and improvements of dump physico-chemical, nutritional & biological characteristics. *MGMI Transactions*, Vol. 102 (1 &2): 21-36, (April 2005- March 2006). (Presented at MGMI AGM on 30<sup>th</sup> March 2006).
- 9) **2001:** Received SIDA fellowship on An Advanced International Training Programme on “ Mining and the Environment” at University of Luleo, Sweden (Sep 17 – Oct 12, 2001 (4 weeks).
- 10) **1995:** Received ODA fellowship for EIA & Auditing at University of Bradford & EIA Centre, Univ. of Manchester, U.K (8.1.96 to 27.3.96) (13 weeks)

## 6. Research interest:

- Phytoremediation of heavy metals in metallic waste;
- Metal contamination, bioaccumulation & translocation
- Ecorestoration of Mine degraded land;
- Mycorrhiza association in coalmine degraded sites;
- Biodiversity conservation in Ecorestored sites;
- Mineclosure & planning of end use of mine degraded lands.
- Biological wastewater treatment; Bioremediation of Fly ash;

## 7. Past Experience in the field of research & industry

Name of Employer	Position held	From	To	Nature of responsibility
IIT(ISM), Dhanbad	Professor	1.1.2010	Continuing	Teaching, Research
ISM, Dhanbad	Associate Professor	1.1.2006	1.1.2010	Teaching, Research
ISM, Dhanbad	Assistant Professor	22.2.2000	1.1.2006	Teaching, Research
ISM, Dhanbad	Sr. Lecturer	16.3.1996	22.2.2000	Teaching, Research
ISM, Dhanbad	Lecturer	28.3.1988	16.3.1996	Teaching, Research
Kirloskar Consultancy Division, Pune.	Sr. Environmental Engineer	Feb,1987	March, 1988	EMP preparation for Hindustan Zinc Limited

## 8. PUBLICATIONS – IN JOURNALS, CONFERENCES & SEMINARS

Books = 04

Papers published in International peered review Journal (SCI) = 63

Book Chapters written = 24

Papers published in National Journals = 34

International Conference proceedings =26

National Conference proceedings = 41

TOTAL = 188 + Books (4)

Ph.D awarded = 11; ongoing 17; M.Tech Dissertations supervised = 34

Google Scholar citation = 1616 (hindex 20; i10 = 43)

- Books = 04

1. **Biogeotechnologies of Mine site Rehabilitation (2017)**. MV Prasad, P. Flavas & Subodh Kumar Maiti (Ed), Elsevier, **ISBN: 9780128129869**, pages 730, January 2018, .elsevier.com/books/bio-geotechnologies-for-mine-site-rehabilitation/prasad/978-0-12-812986-9
2. Maiti, Subodh Kumar (2012). **Ecorestoration of Coalmine degraded lands**. Springer; **Hardcover**, 469 pages, **ISBN-10: 8132208501** (November 30, 2012)
3. Maiti S.K. (2001). **Handbook of Methods in Environmental studies (Vol.1: Water and Wastewater analysis)**. ABD Publishers, Jaipur. ISBN 81-8577-34-0. p. 307.
4. Maiti S.K. (2004). **Handbook of Methods in Environmental studies (Vol.1: Water and Wastewater analysis)**. ABD Publishers, Jaipur. ISBN 81-8577-34-0. p. 307 (**2<sup>nd</sup> Edition**)
5. Maiti S.K. (2002). **Handbook of Methods in Environmental studies (Vol.2: Air, Noise, Soil and Overburden analysis)**. ABD Publishers, Jaipur. ISBN 81-85771-58-8. p. 250.

### 9. List of R&D (Sponsored Research ongoing/Completed) - Selected

Period	Title	Sponsoring agency & Amount	Status
5.2.2015-5.5.2015	Carbon sequestration study at Eco-restoration sites of BCCL	Bharat Coking Coal Limited (BCCL): 2.07 lakhs	Principal Investigator
24.11.2014 – 26.3.2015	Compliance of condition of stage-I clearance of Rohini OC for 74.83 ha	Central Coalfields Limited, Ranchi 3.35 lakhs	Principal Investigator
1.1.2013 – 1.1.2017	Ecological Restoration & compliance Monitoring of Solid waste disposal sites of Nalwa Steel & Power Plant , India	Nalwa Steel & Power Plant, Raigarh, India, 21 lakhs	Principal Investigator
Nov 2014 – Dec 2015	Carbon sequestration study of Eco-restoration sites of Bharat Coking Coal Limited	Bharat Coking Coal Limited, Dhanbad (India), 3 lakhs	Principal Investigator
2013-2014	Solidwaste management plan & activity [CONS/2441/2013-14)	NMDC Limited, Kirandul, dt 21.1.2014 Rs. 33,70,490	Co-PI
2.9.2013 – 7.9.2013	Training of CMPDIL personnel in Microbiological and Toxicological parameters	CMPDIL, Ranchi: Rs. 4.64 lakhs	Principal Investigator
2011-12	Closure design of solid waste disposal site	Nalwa Steel & Power Plant, Raigarh, India, 16 lakhs	Principal Investigator
2013-2015	Ecorestoration cum integrated firming of back filled areas of coal mining sites	Central Coalfields Limited, CCL [12lakhs]	Principal Investigator
July 1993- March 1995	Scientific investigations for reasons of weathering of plants in coalmine overburden dumps	BCCL, Dhanbad (BCCL (I)/93-94/036), 3 lakhs	Principal Investigator
March 1995 – December 1998	Study of greenbelt regarding its noise attenuation and dust arresting capacity in coal mining areas	Coal Science & Technology (MT/S&T/ EE12/94), 14 lakhs	Project Co-ordinator
March 2002 – March 2005	An assessment of overburden dump rehabilitation technologies adopted in CCL, NCL, MCL and SECL mines	MOEF, New Dehli (No. J-15012/38/98-1A II (M) March 2002) 11.2 lakhs	Principal Investigator
July 2001 – December 2002	Study of the possibility of using industrial solid wastes and flyash for backfilling and reclamation of opencast mines	Under EMCBTA (IIA), MOEF, New Delhi (Rs. 8.65 lakhs approx.)	Team member
2004-2007	Baseline studies of Bagjata & Banduhurang sites of UCIL	Board of Research in Nuclear Sciences (BRNS) [Rs. 33.24 lakhs]	Co-Principal Investigator

*Others*

<b>Year</b>	<b>Topic</b>	<b>Status</b>
1987-1988	Comprehensive data generation for Haldia Petrochemicals, Haldia (Kirloskar Division)	Sr Environmental Engineer
1987-1988	Environmental data generation & EMP preparation for Maton, Zawar and Rajpura-daraiba mines of HZL, Udaipur.	Sr Environmental Engineer
1988 – 1990	Preparation of Environmental Management Plan (EMP) for Murpar U/G project, Wani area, WCL. Completed on April 1990. (PCE/Cons/1352/88) Rs. 4.38 lakhs	Principal Investigator
1988 – 1990	Comprehensive environmental data generation for Murpar U/G project, WCL	Co-ordinator
1988-1991	Preparation on EMP for Ghusik U/G project, CMPDIL RI-1, Asansol	Co-ordinator
1989- 1992	Preparation of EMP for Bhargora project, BCCL (PCE/Cons./1362/89) Rs. 11.60 lakhs	Co-ordinator
1993	Rapid EIA of eight Opencast Projects of BCCL	Consultant
1993	Flora & fauna report for Nabakajora, Tilabani and Haripur project, ECL submitted to CMPDIL, RI-1, Asansol (PCE/cons/1368/89)	Consultant
1993	Comprehensive flora & fauna report of Rangamati U/G project, ECL submitted to CMPDIL, RI-1, Asansol	Consultant
1994	Comprehensive flora & fauna report of Rajmahal Opencast project, ECL submitted to CMPDIL, RI-1, Asansol	Consultant
1993	Comprehensive flora & fauna report of Dakshinkhanda U/G, ECL submitted to CMPDIL, RI-1, Asansol	Consultant
1992	Comprehensive flora & fauna report of Hura-C Opencast project, ECL submitted to CMPDIL, RI-1, Asansol (PCE/Cons. 1363/89)	Consultant
1998-2000	Preparation of Training module and Training of Environmental Personnel of Coal India Ltd.	Expert
1999-2003	Environmental Management Capacity Building, Technical Assistance Project: Mining Sub-Component	Expert
2002 – 2003	Environmental and Social management Capacity Building of Coal India Limited. Preparation of Training module and Training of CIL Personnel.	Expert
2005-2006	Preparation of EMPs for Kurasia Opencast project & NCPH U/G project of SECL (Cost: Rs. 14 lakhs).	Consultant

## 10. RESEARCH GUIDANCE

Titles of Ph.D thesis being supervised (Awarded - 11: Ongoing – 17)

Sl No	Name of the candidates	Title of Ph.D topics
1.	Sumana Banarjee (2003)	Biodegradability of Phenol in coke oven effluent in laboratory and bench scale studies [ <b>Awarded</b> ]
2.	Dilip Markenday (1998)	Assessment of Heavy metals bioabsorption efficiencies of some microbial isolates in multi-component aqueous environment. [ <b>Awarded</b> ]
3.	Manab Das (2008)	Bioremediation of copper mine tailings with special emphasis on metal accumulation, distribution and tolerance in plants [ <b>Awarded</b> ]
4.	Sangeeta Mukhopadhyay, (2012)	Study of soil quality indicator parameters to assess the health of reclaimed coal mine degraded land [2008 DR 0002] [ <b>Awarded</b> ]
5.	Sanjoy Kumar (2012)	Reclamation capabilities of alluvial soil cover in the eastern part of Ranigunj coalfield (Sanjoy Kumar, 2008 DR 0029) [ <b>Awarded</b> ]
6.	Adarsh Kumar (2014)	Study of environmental impacts of chromite and asbestos mines waste and its phytoremediation [Adarsh Kumar, 2011DR0042] [ <b>Awarded</b> ]
7.	Lata Dora (18.2.2009)	Study of Phytoplankton community as a bioindicators of water pollution in Damodar river (Lata Dora, 2010DR 0119) ( <b>Awarded</b> )
8.	Subhabrata Banerjee (10.7.2015)	Study of Pollution load on Swarnrekha river by an industrial town (Jhamshepur) and its impact on Biotic Component (Subhabrata Banerjee, 2012DR1040) ( <b>Awarded on 10.7.2015</b> )
9.	Abhiroop Chowdhury (25.2.2013)	Effect of Water and soil pollution on the Mangrove biodiversity with special emphasis on salinity tolerance: A case study from Sundarban Delta (WB, India)” [Abhiroop Chowdhury,2013 DR 0015] ( <b>Awarded</b> )
10.	Avik Banerjee (24.7.2013)	Microalgae Assisted Carbon dioxide Sequestration using Flue Gas in a Photo bioreactor and Biofuel Production [Avik Banerjee, 2013DR0153] ( <b>Awarded</b> )
11.	Santosh K Verma (11.7.2014)	Impact of Fly ash in the surrounding of Thermal Power Plant with respect to heavy metals, rare earth elements and PAHs on soil biological activities and assessment of toxicity risk [Santosh Kumar Verma, 2014DR0131], ( <b>Awarded</b> )
12.	Jitendra Ahirwal (31.1.2014)	Ecorestoration- Cum- Integrated Farming (ECIF) in Backfilled Area of Opencast Coalmines [Jitendra Ahirwal 2014DR0047] ( <b>Submitted</b> )
13.	Vivek Rana (26.7.2014)	Feasibility of using Phyto Reed Technology for Treatment and Reuse of Wastewater [2014DR 0276], ( <b>On going</b> )
14.	Ratnadwip Paul (23.10.2013)	Achieving Sustainability in Aluminium industry with a primary focus on control over Emission’s from Aluminium production, raw material spillage prevention & energy efficiencies [Ratnadwip Paul, Process Engineer, Madden Aluminium Company/ Alcoa] 2014DR1158 ( <b>part time, On going</b> )
15.	Rimi Das (24.7.2013)	Study of Carbon Dynamics of reclaimed coalmine chronosequence sites with emphasis on Carbon and Nitrogen Mineralization and Amendments [Rimi Das, 2013DR0215], ( <b>On going</b> )
16.	Anjani Prasad Singh (6.5.2013)	Integrated water resource management for sustainable development in an iron-ore mining area, Bailadila, Chhattisgarh, India. [Anjani Prasad Singh, 2013DR 1097], ( <b>part time, On going</b> )
17.	Shanti Priya Ghosh (16.3.2013)	Studies on the metal contamination in roadside soil and vegetation due to vehicular emission along the National Highways and its impact on roadside ecosystem (SP Ghosh, 633012), ( <b>part-time, On going</b> )
18.	Umesh Mudhukar Rao Sawarkar (21.11.2014)	Study of Eco-restoration and modeling of Coal mining overburden dumps in selected areas of some coalfields (Umesh Mudhukar Rao Sawarkar, 2015DR 1013) ( <b>part-time, ongoing</b> )
19.	Divya Pal	Bioaccumulation of heavy metals in lentic and lotic habitats: A comparative

	(9.02.2015)	study (Divya Pal , 2015DR 0036) ( <b>ongoing</b> )
20.	Peeti Kumari (17.07.2015)	Assessment of pollution load and its impacts on biotic components in Dimna Nalla - interconnecting a lentic (Dimna Lake) and lotic (Subarnarekha River) habitats in Jamshedpur (Preeti Kumari, 2015DR0197) ( <b>On going</b> )
21.	Deep Raj (16.07.2015)	Analysis of Mercury in soil, coal and fly ash and its bioaccumulation in plant and phytoremediation by Brassica juncea (L.) Czern (Deep Raj, 2015DR0171) ( <b>On going</b> )
22.	Sourav De	Ergonomic assessment of workplace of hot metal crane operators in an integrated iron and steel plant: influences of environment-machine interface on the worker ( Sourav De, Tata Steel- Part time) ( <b>On going</b> )
23.	Manik Lal Sahoo 29.6.2015	Ecorestoration of waste dump with emphasis on topsoil management, erosion control, vegetation development and costing ( ML sahuo, 20151DR/1113, NSPL- Part time) ( <b>On going</b> )
24.	Sneha Kumari (17.03.2017)	Assessment of the recovery of reclaimed mine soil fertility with emphasis on soil amendmets, nitrogen and carbon stock, deep-seated carbon accumulation and carbon sequestration (Sneha Kumari, 2017DR000 359)- ( <b>On going</b> )
25.	Prakash Chinsoria (CMPDI, RI- 6)	Study of Carbon Sequestration of Reclaimed coal mine overburden dumps with emphasis on tree species composition and accretion of nutrient stocks (part time) - ( <b>On going</b> )
26.	Ms Sneha Bandopadhyay	Evaluation of Restoration Success of Afforested Post-mining Lands and Development of Sustainable Indicator Parameters (17DR000508) - <b>ongoing</b>
27.	Ms Dipita Ghosh	Application of Biochar for Ecological restoration and to enhance carbon sequestration in coal mine degraded land (2017DR000426) - <b>ongoing</b>

### TITLE OF M.TECH THESIS

SN	Year	Title & Name of the Candidate
1.	2018	Geo-spatial applications in city Sewage management [Biswadip Sengupta; 16MT001083]
2.	2018	Assessment of integrated liquid waste management in industrial estate and appraisal for technical upgradation [ Amrit Kumar Tiwary; 16MT001139]
3.	2018	Performance assessment of Common effluent treatment plant (CETP) for industrial cluster and approaches to meet regulatory norms [Anu Katiyar; 16MT000932]
4.	2017	Carbon sequestration in reclaimed coal mine soil [Shivam Saw, 15MT 000165]
5.	2017	Carbon sequestration in reclaimed mine soils by vegetation [Ravi Shankar, 15MT 00292]
6.	2016	Qualitative Analysis of heavy metals in surface water of Damodar river [Vikrant Gautam, 2014MT 00079]
7.	2016	Performance evaluation of common effluent treatment plants in Delhi [Krishma Yadav; 14MT000493]
8.	2015	Assessment of bioavailable heavy metals in fly ash and their bioaccumulation in naturally growing vegetation (Suchita Mukhopadhyay: 2013MT0163]
9.	2015	Carbon sequestration potential in forest land, reclaimed minesoil and reconstructed site- A comperative study (Silpa Kar, 2013MT0154)
10.	2014	Spatio-temporal change analysis of vegetation cover in Jharia Coalfield (Rashda Khanam: 2012MT 0051)
11.	2014	Assessment and Modelling of the impacts of a thermal power plant in Jharkhand region on air, water and noise environment (Md. Hamjala Alam; 2012MT0207)



12.	2013	Assessment of Ambient PM10 and heavy metals concentration in coal mining areas: A case study from Jharia coalfields, Jharkhand [ Amit Kumar Mishra; 2011MT0085]
13.	2012	Quantative estimation of carbon sequestration in reclaimed overburden dumps (Hasan Akhtar; 2010MT 0124)
14.	2009	Isolation and development of fungal biomass for biosorption studies in heavy metals revomal [Devendra Kumar Yadav, 612932]
15.	2007	Interaction of Surfactants and Dyes in the nature [Vikas K Umrao, Admn No 612 890]
16.	2007	Production of fatty acid Methy Esters by using Biotechnology principles to increase the yield of biodiesel [S Kamal Basha, 612917]
17.	2006	Metal accumulation pattern in the naturally growing vegetation in the fy ash lagoons of Santaldih Thermal Power Plant, WB (Shishir Jaiswal)
18.	2006	Assessment of heavy metals in CETPs and industrial sludge and biosorption studies using non-viable fungal biomass (Kamal Kr Jain)
19.	2004	Study of settling curve & design of settling tank for coal washery effluents using synthetic & natural coagulants/ flocculants [Poonam Sharma]
20.	2002	Effect of BOD rate constant on design and performance of wastewater treatment process (Sangeeta Ganguly)
21.	2002	Treatment of coke plant effluent by Duckweeds (Arindam Halder)
22.	2001	Treatment of Hospital wastewater by Sequential batch Reactor (Suman Chattaraj)
23.	2000	Treatment of fertiliser wastewater using Sequential batch Reactor with special emphasis on Nitrification- Denitrification. (Nilesh Kumar)
24.	2000	Treatability studies of hospital wastewater in Sequential batch Reactor (SS Murthy)
25.	1997	Treatment of synthetic coke plant effluent using Sequencing Batch Reactor (Anshuman Singh)
26.	1997	Simultaneous Carbon , Nitrogen and Phosphorus removal from domestic sewage by sequential batch reactor (Pranab Ghosh)
27.	1996	Phenolic waste biodegradation by Sequential Batch Reactor (Partha Chakroborty)
28.	1996	Treatment of Synthetic phenolic wastewater through anaerobic filter and anaerobic baffled filter (M Mannan)
29.	1993	A study on Nutrient Status in Reclaimed Overburden spoil dumps of ramagundum Opencast Project-1 (S.S.Reddy)
30.	1992	Some ecological aspects of land reclamation in Jharia Coalfield (Salilendra Singh)

#### **Title of M.Tech (By Research) Theses Supervised:**

1997	Microbial Biotechnological approach for bioabsorption and bioaccumulation of Heavy metallic contaminants (DK Markandey, CPCB, New Delhi).
1998	Use of UASB-Macrophytes treatment system in treatment of Coke-Oven effluents (Rakesh Ranjan, CME)
1998	Trend analysis in Environmental Deterioration in Singrauli Coalfield area (Manoj Agarwal , NCL)
2000	Possibilities of and Risks involved in use of Sewage effluent for irrigation (Manoj K Singh, MECON).