

Brief Bio-data

1. Name: Dr. Manish Kumar

2. Date of Birth: 5th Jan., 1973

3. Current Position and Address (Include Email ID and Contact Number) : Sr. Pr. Scientist, Kusum Vihar, Kalyani Niwas, Beside Panjab and Sind Bank, Koyala Nagar, Saraidhela, Dhanbad: 826005, Email: manish@cimfr.nic.in, manishcfri@gmail.com, Mobile no. :9431319972

4. Educational qualifications: (Graduation and above)

Sl. No.	Degree	Year of Passing	University/Institute	Subject
1.	B. Tech.	1996	NIT Jamshedpur	Mechanical Engg.
2.	M. Tech.	2004	NIT Jamshedpur	Computer Integrated Design and Manufacturing
3.	Ph. D.	2014	IIT (ISM), Dhanbad	Fuel Engg.

5. Work experience:

Designation	Institute/company	From	To	Nature of Work
Site Engineer	BOC(l) Ltd., Jamshedpur	Sept. 1996	July, 1998	Oxygen plant construction and erection
Design Engineer	TRF Ltd., Jamshedpur	Aug, 1998	July, 2001	Design of heavy material handling and mineral processing equipments
Scientist B	CSIR-CIMFR, DC, Dhanbad	Aug, 2001	July, 2005	R & D on coal for power generation, coal carbonization and development of coke oven plants and associated equipments, development of coal washing equipment.
Scientist C	CSIR-CIMFR, DC, Dhanbad	Aug, 2005	July, 2009	
Sr. Scientist	CSIR-CIMFR, DC, Dhanbad	Aug, 2009	July, 2013	
Pr. Scientist	CSIR-CIMFR, DC, Dhanbad	Aug, 2013	July, 2018	
Sr. Pr. Scientist	CSIR-CIMFR, DC, Dhanbad	Aug, 2018	Cont....	

6. Work Area(s)/ Specialization: Energy, Coal Carbonisation, Coal Washing, development of related equipments, Quality monitoring of Iron Ore.

7. Major contributions: (Max. 100 words): **a.** Design and manufacturing of coal handling plant. Executed numbers of CHP for Coke Oven Projects, Coal Beneficiation Plants. **b.** Design of coal handling equipments like Crushers, Screens, Apron Feeders etc. **c.** Developed small scale coal washing equipments like JIG, Flotation unit etc. **d.** Executed Non Recovery/Heat Recovery Coke Ovens along with its accessories like Pusher Car, Quenching Car, Charging Car, and Quenching Tower etc. **e.** Developed stamping/charging/pushing machine for Coke Ovens. **f.** Developed Explosive Proof Steel Tunnel for metal cladding applications. **g.** Developed expertise in Coal combustion

for Power Plant and Steel Industry. **h.** Contributing in Clean Coal Technology development studies. **i.** Quality Monitoring of Iron Ore.

8. No. of Research Publications:

- Papers in Journals: 15
- In conference proceedings: 14
- Invited lectures delivered: 5
- List of best 05 publications
 - a.** Study on the Effect of the Operating Condition on a Pulverized Coal-Fired Furnace Using Computational Fluid Dynamics Commercial Code, M. Kumar and S. G. Sahu, *Energy & Fuels* 21 (2007), 3189–3193.
 - b.** Effect of coal washing on fireside deposition and heat transfer performance in pf fired furnaces, Manish Kumar, V K Saxena and Ashis Mukherjee, *International Journal Of Emerging Technology And Advanced Engineering*, Volume 2, No. 3, August 213, pages 71-81.
 - c.** Efficient Utilization of Indian Coking Coal: Opportunities and Challenges, Manish Kumar and H. P. Tiwari, *Metallurgical Research & Technology*, 2020, 117, 209 (2020)© EDP Sciences, 2020, 7.
 - d.** Assessment of Naphthalene Absorption Efficiency from Coke Oven Gas, Manish Kumar, Dr. H. P. Tiwari, *Coke and Chemistry* 63(10):500-512, DOI: 10.3103/S1068364X20100026, Published: 21 February 2021.
 - e.** Impact of petrographic properties on burning behaviour of pulverized coal using Drop Tube Furnace, S. Biswas, N. Choudhury, S. Ghosal, T. Mitra, A. Mukherjee, S.G.Sahu, M. Kumar, *Energy & Fuels*, 21, (2007) 3130-3133.
- Books/Chapters authored/edited: 2

9. List of 5 Major Contract R&D Projects:

- a.** Evaluation of combustion behavior of coal at different ash levels
- b.** Clean Coal Technology
- c.** Investigation on utilization potential of Spent Pot Lining of smelter as a co-fuel at captive power plant
- d.** Development of Explosive proof tunnel for Metal Cladding. (M/S Giridhari Explosive Pvt. Ltd.)
- e.** Novel Process for production of Hydrogen by non-thermal plasma reformation technique. (MNRE)

10. (a) Name of Patents/Copyrights applied /granted/commercialized:

- a.** Utilisation potential of Spent pot lining (SPL) of smelter as a co-fuel at power plant
- b.** A Process of Optimization of Oxygen Concentration In Blast Air And Particle Size Distribution of Fuel for Injection Into a Blast Furnace to Improve Combustion of Fuel
- c.** Flue gas recirculation system for oxy fuel coal combustion in pulverized coal fired pilot plant
- d.** A process for increasing carbon dioxide concentration in flue gas
- e.** Flexible cold model set up for developing chemical looping combustion system
- f.** An Improved Technology for Production of Soft Coke for Domestic Uses
 - (b) Technologies/Products /knowhow/Services developed :**
 - a.** 20 TPH coal washing Jig.
 - b.** Burner setup for channel heat up experiment for NPCIL, CT - PT
 - c.** Explosive proof tunnel

- d.** Coal Stamp Charging System for Drag Type Coke Oven
 - e.** 2 Product Battac Jig
 - f.** Process for producing modified activated carbon for vapour phase mercury capture
 - g.** Technology for production of soft coke
11. Honors/Awards/Recognitions/Fellowships/Scholarships/Professional Memberships received:
- a.** Committee member of different committees for formulation of BIS
 - b.** Life member of Indian Institute of Mineral Engineers
 - c.** Life member of Mining Engineers' Association of India
 - d.** Life Member of Institution of Engineers.
 - e.** Member of INDIAN NETWORK FOR CLIMATE CHANGE ASSESSMENT, Ministry of Environment and Forests (MoEF), Govt. of India
12. Societal Contributions: Installation of developed technologies generates employment. Each soft coke plant generates direct and indirect employment for about 50 persons. Participated actively in JIGYASA program organized by the institute for school children. Delivering lectures to college students and provide guidance to B. Tech., M. Tech. and M. Sc, students for their project work.