Brief Bio-data

1. Name: ASHIS MUKHERJEE 2. Date of Birth: 11.01.1966

3. Current Position and Address: Chief Scientist, Combustion section, CSIR-CIMFR, Dhanbad-828108, drashismuk@yahoo.co.in, amukherjee@cimfr.nic.in, 0326-2388269

4. Educational qualifications: (Graduation and above)

Sl. No.	Degree	Year of Passing	University/Institute	Subject
I	B.E. Chemical	1988	R.E.College, Durgapur	Chemical
ii	M S (Science and Technology)	1991	BITS , Pillani	Science & Technology
iii	M Tech (Mineral Engg.)	1993	ISM, Dhanbad	Mineral Engg
iv	Ph.D	1999	ISM, Dhanbad	Combustion

5. Work experience:

Designation	Institute/company	From	To	Nature of Work
Scientist B ,C,E1 and EII	CSIR-CFRI	19.06.1989	18.06.2009	Scientific
Sr Pr Scientist	CSIR-CIMFR	19.06.2009	18.06.2014	Scientific
Chief Scientist	CSIR-CIMFR	19.06.2014	Cont.	Scientific

6. Work Area(s)/ Specialization: Coal Combustion, Clean coal Technology.

7. Major contributions: (Max. 100 words):

i). Coordinator of the Clean Coal Technology development program of CSIR ii). Design, installation and commissioning of Drop Tube Furnace (DTF) and Fuel Evaluation Test Facility (FETF) for combustion behavior of coal. iii). Oxy fuel combustion technology. iv). Utilization of Non-coking Coal as PCI in the Blast Furnace. v). Equivalent chart for conversion from UHV to GCV. vi). Co-combustion of coal and biomass blends. vii). Bio Reactor design for Bio-Gasification. viii). Utilization of coal blends in PC power plant. ix). Fluidised bed reactor is designed for production of activated carbon from North Eastern region coal. x.) Bench scale plant is designed for production of potassium fertilizer from fly ash. xi). Development of Coal Water Slurry preparation and combustion technology . xii). Development of Solvent Refined Coal Technology. Xiii). Normative coal requirement for different Industries. xiv). Utilization of Spent Pot Lining of smelter.

8. No. of Research Publications:

i). Papers in Journals: More than 20, ii) In conference proceedings: More than 20

iii). Invited lectures delivered: More than 10, iv) List of best 05 publications.

1) Modelling for suspension of coal in multiphase reactor system- Mukherjee A, Hazra S K etc, Fuel processing Technology, 1998. 2). Revision of country specific NCVs and CEFs for all coal categories in Indian context and its impact on estimation of CO2 emission from coal combustion activities- P Sarkar, A Mukherjee etc, Fuel , 2019, vol 236 , pp 461-467, 2019-01-15. 3). Studies on the combustion behaviour of blends of Indian coals by TGA and Drop Tube Furnace- S. Biswas, N. Choudhury, P. Sarkar, A. Mukherjee, S.G. Sahu, P. Boral and A.Choudhury. – 2006, Fuel Processing Technology, Vol. 87,191-199. 4). Influence of rank and macerals on the burnout behavior of pulverized Indian coal- Nandita Choudhury, S.Biswas, P. Sarkar,

Manish Kumar, Sujit Ghosal, Tandra Mitra, A. Mukherjee, A. Choudhury.- International Journal of Coal Geology, Vol 74, 2008 Pg No 145-153. 5). Impact of Petrographic Properties on the Burning Behavior of Pulverised Coal using a Drop Tube Furnace – S. Biswas, A. Mukherjee, N. Choudhury et. al., Energy & Fuels 2007, 21, 3130-3133. Iv) Books/Chapters authored/edited: Three

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

I) Clean Coal Technology Programme of CSIR- Oxy Fuel Combustion and Co-combustion of coal and bomass. II) Investigations on the combustion behavior of coal blends of different types and origin to assess their suitability for pulverized coal injection in Blast Furnace. III) Development of biomass ash/biochar based slow release potassium fertilizer. IV) Combustion study of coal blends. V) Migration study from UHV to GCV based grading system.

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

(i) Process development for conversion of non-coking coal/lignite/washery middlings to a coking agent by SRC-I technology, Indian patent SRC/23/06/1994. (ii) An improved process for the production of coal water slury, 042NF2001. (iii) Device for feeding pulverized coal to furnace, PCT/IN03/00468. (iv) Feeding system for pulverized coal, Wo/2005/064238. (v) Cooling System, 499NF2004. (vi) A Process for the development of reconstituted coal water emulsion: a novel fuel for power generation, 0383 DEL 2009. (vii) A process of optimization of oxygen concentration in blast air and particle size distribution of fuel for injection in blast furnace to improve combustion of fuel, 1465/KOL/2013. (viii) Flue gas recirculation system for oxy fuel coal combustion in pulverized coal fired power plant, 0222NF2014. (ix) A process for increasing CO_2 concentration in flue gas, 0241NF2014. (x) Process for the preparation of slow release potassium fertilyser from combustion waste of biomass based power plant, 0197NF2016. (xi) Flexible cold model set up for developing chemical looping combustion system, 0116NF2016. (xii) Coal/biomass based movable reactor, Copy rights no. L-81082/2019. (xiii) Copyright: Hybrid Algal Race way photo bioreactor for High rate CO_2 Capture, Filed on 16.02.2021. (xiv) Copyright Sustainable Development Tree model, Filed on 19.11.2020. (xv) An improved technology for production of soft coke for domestic uses, 0167NF2019. (xvi) Process for biomethane production from coal mines rejects by rare archaea, 0149NF2019

(b) Technologies/Products /knowhow/Services developed:

i) Development of clean coal technology (Co-combustion and oxy fuel combustion). ii) Modification of FBC unit for coal-biomass blend combustion. iii) An improved technology for production of soft coke for domestic uses. iv) Coal/biomass based movable reactor for conversion of waste to gas. v) An improved process for the production of coal water slury. vi) Process development for conversion of non-coking coal/lignite/washerymiddlings to a coking agent by SRC-I technology.

11. Honors/Awards/Recognitions/Fellowships/Scholarships/Professional Memberships received:

i) Enco 2019 Best Paper Award. ii) Member of the Task Force on Ultra Super Critical Technology of Govt. of India. iii).Member of the committee formed by Govt of India on ‘Blending of coal’.iv) Technology Award for production of Nicotinamide.

12. Societal Contributions