Brief Bio-data

1. Name: Dr. Sudipta Datta

2. Date of Birth: 25.01.1971

3. Current Position and Address : Sr. Principal Scientist, Gasification and Catalysis Research Group, CIMFR (DC), PO-FRI, Digwadih, Dhanbad-828108, Jharkhand,India Phone no: 03262388237/ Mob no: 9471191154, E-mail: sdatta@cimfr.nic.in

4. Educational Qualifications (Graduation and above)

Sl.No.	Degree	Year of Passing	University/Institute	Subject
1	B.Tech	1995	Calcutta University	Chemical
2	M.Tech	1997	Calcutta University	Petroleum Ref Engineering
3	Ph.D	2018	IIT-ISM, Dhanbad	Gasification

5. Work experience:

Designation	Institute/ company	From	To	Nature of work (R&D)
Scientist B	CIMFR, Dhanbad	28.10.1997	27.02.2002	Petroleum Heavy Residue upgradation through aqua conversion to value added products.
Scientist C	CIMFR, Dhanbad	28.02.2002	27.02.2007	Development of coal-water emulsion in Continuous Modular Reactor for power generation, upgradation of refinery wastes in to middle distillate.
Principal Scientist	CIMFR, Dhanbad	28.02.2007	27.02.2012	Development of pilot scale Fluidized Bed Gasifier, Gasification of coals, biomass and coal/biomass blends in Fluidized Bed Gasifier, study the agglomeration behaviour of high ash coal.
Sr. Principal Scientist	CIMFR, Dhanbad	28.02.2016	Continuing	Gasification of high ash coal, co-gasification of coal and biomass, multi feed gasification, gasification reactivity and kinetics in TGA/TGR, Conversion of syngas to methanol, development of catalyst for syngas to methanol conversion.

6. Work Area(s)/Specialization: Coal & biomass gasification, petroleum residue upgradation, pilot plant development and operation, reactivity of coal and biomass, heterogeneous catalysis.

7. Major contributions: Involved in development of heat supported pilot scale Pressurized Fluidized Bed Gasifier for high ash Indian coal/biomass and their blends. Multi feed gasification for its application in remote locations utilizing locally available resources. Development of upgradation process and catalyst for petroleum heavy residue and other refinery waste streams to different value added products. Involved in Mission Mode Project on development of 250 kg/day Coal to Methanol pilot plant facility. Also involved in the design and development of different pilot scale facility for various R&D activities.

8. No. of Research Publications:

- Papers in Journals: 21
- In conference proceedings: 20
- Invited lectures delivered: 03

- List of best 05 publications:
- “Agglomeration behaviour of high ash Indian coals in fluidized bed Gasification pilot plant”. Sudipta Datta, P Sarkar, S Saha, G Sahu, P Chavan, A. K. Sinha and V. K. Saxena. Applied Thermal Engineering 86, 2015, 222-228.
- “Co-gasification of high ash Indian coal-biomass blends in a pilot-scale fluidized bed gasifier” Sudipta Datta, V Chauhan, G Sahu, P D. Chavan, S Saha, P K. Gupta, P Dutta. *Biomass Conv. Bioref.* **10,** 831–838 (2020)
- “Comparison of CO_2 Gasification Reactivity and Kinetics: Petcoke, Biomass and High Ash Coal”. N Kumari, S Saha, G Sahu, V Chauhan, R Roy, S. Datta, P. D. Chavan. Biomass conversion and Biorefinery (2020).
- “Gasification of coal and press mud blends in fluidised bed gasifier” S Datta, V K Saxena, P D. Chavan, G Sahu, S Saha, P. Dutta, P Sarkar. Int. J. Oil, Gas and Coal Technology, Vol. 19, No. 2, 2018.
- “A Review on Biodiesel Production through Heterogeneous Catalysis Route” G Sahu, N K Gupta, A Kotha, S Saha, S Datta, P Chavan, N Kumari, P Dutta. ChemBioEng Rev 2018, 5, No. 4, 231-252.
- Books/Chapters authored/edited: 01

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

- Agglomeration formation in reducing condition in Pressurized Fluidized Bed Gasification (PFBG) of low rank high ash coal.
- Tap Coal: Co-gasification under clean coal Technology. Activity V: Co-gasification of coal with biomass.
- Development of Oxygen Enriched Air Blown Pressurized Fluidized Bed Gasifier
- Coal-Syngas to Methanol (CoSynol).
- Study on Multi-feed gasification performance of high ash coal, biomass and MSW blends in the existing fluidized bed gasification unit.

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

Patents:

- Development of petroleum residue-water emulsion; a novel fuel for power generation
- System and process for conversion of heavy oil into lighter fractions
- Pressurized Fluidized Bed Gasification Pilot Scale Test Facility with the provision of external heating to test the high ash coals, biomass, rejects and their blends
- Development of Thermo-gravimetric Reactor (TGR) to study weight changes during thermo-chemical reactions and process thereof
- Flexible cold model set up for developing chemical looping combustion system

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- Design of Pressurized Fluidized Bed Gasification system
- Selection Matrix: Physico-chemical properties of Solid Fuels vis-a-vis Suitable Type of Gasifier
- Coal Characterization Matrix to evaluate Gasification Potentiality
- High Ash Indian Coals: Gasification Strategy.

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

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

12. Societal Contributions: Provided training to B Tech /M Tech and M Sc. student of different Universities to develop trained resources.