

1. Name: Dr. Gajanan Sahu  
 2. Date of Birth: 25.05.1977  
 3. Current Position and Address : Sr. Technical Officer (1), Gasification and Catalysis Research Group, CIMFR (DC), PO-FRI, Digwadih, Dhanbad-828108, Jharkhand, India, Phone no: 03262388389/ Mob no: 9931106448  
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4. Educational Qualifications (Graduation and above)

Sl.No.	Degree	Year of Passing	University/Institute	Subject
1	B.Sc (Chemistry Hons)	1998	Sambalpur University	Phy, Chem, Maths.
2	M.Sc	2000	Sambalpur University	Chemistry
3	M.Phil	2002	Sambalpur University	Organic Chemistry
4	Ph.D	2012	IIT-Delhi	Applied Chemistry

5. Work experience:

Designation	Institute/ company	From	To	Nature of work (R&D)
Project Associate	CES, IIT-Delhi	24.02.2004	08.05.2005	Study the transesterification reaction using homogeneous catalysts
Technical Assistant	CIMFR, Dhanbad	25.05.2005	24.05.2012	To determine the surface properties of coal, catalyst and biomass using sophisticated instruments
Technical Officer	CIMFR, Dhanbad	25.05.2012	24.05.2015	To study the gasification reactivity of coals, biomass and co-gasification of coal and biomass using TGA Instrument
Sr.Technical Officer (1)	CIMFR, Dhanbad	25.05.2015	Continuing	To analysis the gaseous product obtained from PFBG plant by GC and study the gasification kinetic and reactivity of different coals in TGA system

6. Work Area(s)/Specialization: Coal Gasification, Surface characterization of coal, reactivity of coal and biomass, Heterogeneous catalyst, Biodiesel

7. Major contributions: (Max. 100 words)

New method has been introduced for true density determination of coal samples using nitrogen as probe gas instead of commonly used helium. Surface properties have been studied for high ash Indian coals. The data obtained from surface properties is very much useful to select the coal for specific end uses. Gasification reactivity study of high ash Indian coals and different biomass has been done in TGA. The generated data will be helpful in the development of suitable gasifier for high ash Indian coals.

8. No. of Research Publications:

- Papers in Journals: 22

- In conference proceedings: 17
- Invited lectures delivered:
- List of best 05 publications:
- “Density measurements of coal samples by different probe gases and their interrelation”. Sujan Saha, B. K. Sharma, S. Kumar, **G. Sahu**, Y. P. Badhe, S. S. Tambe and B. D. Kulkarni. Fuel 86, 2007, 1594 – 1600.
- “Agglomeration behaviour of high ash Indian coals in fluidized bed Gasification pilot plant”. Sudipta Datta, Pinaki Sarkar, Sujan Saha, **Gajanan Sahu**, Prakash Chavan, A. K. Sinha and V. K. Saxena. Applied Thermal Engineering 86, 2015, 222-228.
- “Comparison of CO<sub>2</sub> Gasification Reactivity and Kinetics: Petcoke, Biomass and High Ash Coal”. Neelam Kumari, Sujan Saha, **Gajanan Sahu**, Vishal Chauhan, Rupak Roy, S. Datta, P. D. Chavan. Biomass conversion and Biorefinery (2020). <https://doi.org/10.1007/s13399-020-00882-z>
- “Production of biodiesel from high free fatty acids content Jatropha curcas oil using environment affable K–Mg composite catalyst”. **Gajanan Sahu**, Sujan Saha, Sudipta Datta, Prakash D. Chavan, Vishal Chauhan, Pavan K. Gupta. Asia Pacific Journal of Chemical Engineering, First published: 04 February 2021 <https://doi.org/10.1002/apj.2620>.
- Gasification Reactivity of High Ash Indian Coals in Varying Concentrations of CO<sub>2</sub>. Sujan Saha, **Gajanan Sahu**, P. D. Chavan, S. Datta. International Journal of Oil, Gas and Coal Technology 18(1-2), 2018, 163-186.
- Books/Chapters authored/edited: 02

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

- Development of 1.5 TPD Oxy Blown Pressurized Fluidized Bed Gasification facility.
- Coal-Syngas to Methanol (CoSynol) (HCP-32/2021).
- Study on Multi-feed gasification performance of high ash coal, biomass and MSW blends in the existing fluidized bed gasification unit (Project No. SSP-7259).
- Gasification Potential Mapping of Indian Coals and Utilization Strategy (MLP-117/2018-19)
- Ash Characterization with respect to operational aspect in different types of gasifier” (MLP-138/2020-21).

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

**Patents:** i) System and process for conversion of heavy oil into lighter fractions ii) 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 iii) Development of Thermogravimetric Reactor (TGR) to study weight changes during thermo-chemical reactions and process thereof.

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

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

#### 11. Honours/Awards/Recognitions/Fellowships/Scholarships/Professional

Memberships received: Fellowships/Scholarships: GATE qualified in Chemistry, Percentile 94.90.

**12. Societal Contributions:** I have given training for M.Sc. student of different organization in completion of their internship related to industrial approach.