

GASIFICATION

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Coal Gasification

Coal, the most abundant and affordable fossil fuel will remain the major source of energy in the coming days due to devolatilization of petroleum feed stock for various applications. At the same time, presently, the majority of coal produced in India is of high ash low rank. The coal gasification, the process of breaking down coal in to chemical components and fuels prior to combustion, is needed to meet efficient utilization of such coals. CIMFR is presently involved in carrying out R&D work in the area of coal gasification and also rendering technical support/services to coal based industries in the nation. This includes prediction of quality of gas (within a probable range) produced from a particular coal as well as selection of correct feed for conventional as well as modern gasifier. Our group, consisting of scientists, engineers and technocrats are able to provide fruitful suggestion for the troubleshooting points and also in design aspects of fluidized bed gasification. As such, CIMFR scientists have represented various committees and have been invited by abroad countries in the area of gasification including underground coal gasification.

Our Institute is equipped with various facilities (well equipped laboratory) in terms of equipment/instruments as well as experienced capable scientists. They are related to different disciplines such as, Surface chemistry, Analytical chemistry, engineering design etc. and all under one roof of the gasification division.

THE COAL GASIFICATION PROCESS

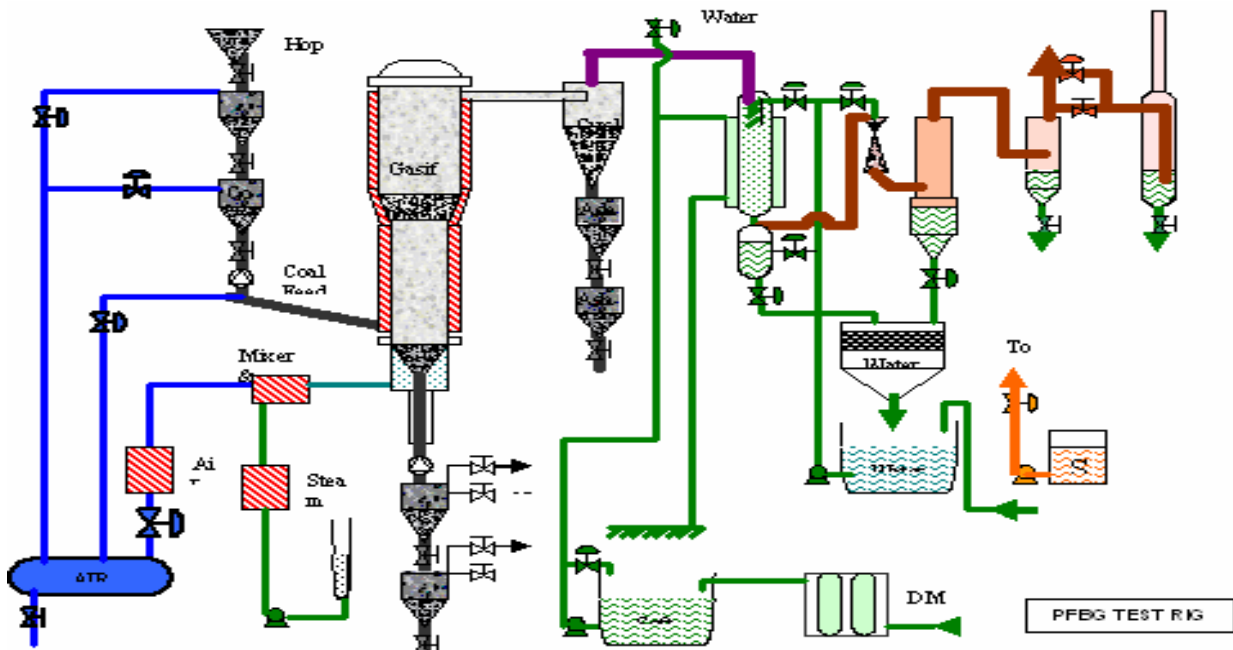


1. The following facilities are for gasification kinetic studies:

- Surface Area Analyzer (Tristar 3000, Micromeritics, USA)
- Mercury Porosimeter (Autopore IV 9500, Micromeritics, USA)
- Gas Pyconometer (Ultra Pycnomter 1000, Quantachrome, USA)
- TPD-TPR-TPO System(AutoChem 2910, Micromeritics, USA)
- X-Ray Fluorescence Spectrometer (PW 2424 MagiX, Philips, NetherLand)

2. A Pressurized Fluidised Bed Gasification (PFBG) is in installation stage in which kinetics data would be validated. Also this will be helpful in generation of design data for bigger plant.

PFBG PILOT PLANT at CIMFR



3. Service Offered

- We have already prepared a report for M/s Adani Energy Limited Gujrat for selection of suitable gasifier in the Indian coal context.
- We are also consultants for M/s Chemitto Technologies, Nasik for development of a small fluidized bed gasifier unit at Nasik.
- Recently CIMFR, Dhanbad along with NCL, Pune have been assigned a consultancy project by M/s Radhe Renewable Energy, to support them in modification/ audit of their 1 ton fluidized bed gasifier at Rajkot, Gujrat.

Technical enquiry

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