

# The Extrel® MAX300™ Series of quadrupole mass spectrometers provides a valued solution for monitoring all phases and types of gasification.

In today's ever-increasing search for alternative fuel sources, Gasification is a technology that is steadily gaining popularity. Extrel's extensive experience with Gasification and similar applications such as

Ammonia and Methanol production makes Extrel mass spectrometers an excellent choice to monitor this technology.

## MAX300-IG™ Industrial Mass Spectrometer Benefits

- **Flexibility** – Dynamic Range to measure % level Syngas composition and PPM level Sulfur contaminates
- **Real-time Results** – Monitor the composition of Syngas for tighter control of Gasifier Conditions
- **Multipoint Analysis** – One analyzer monitors all points of analysis of Syngas production and the resulting final product processes

**Gasification** – A partial oxidation process, which produces Syngas comprised primarily of Hydrogen (H<sub>2</sub>), Carbon Monoxide (CO) and Carbon Dioxide (CO<sub>2</sub>).

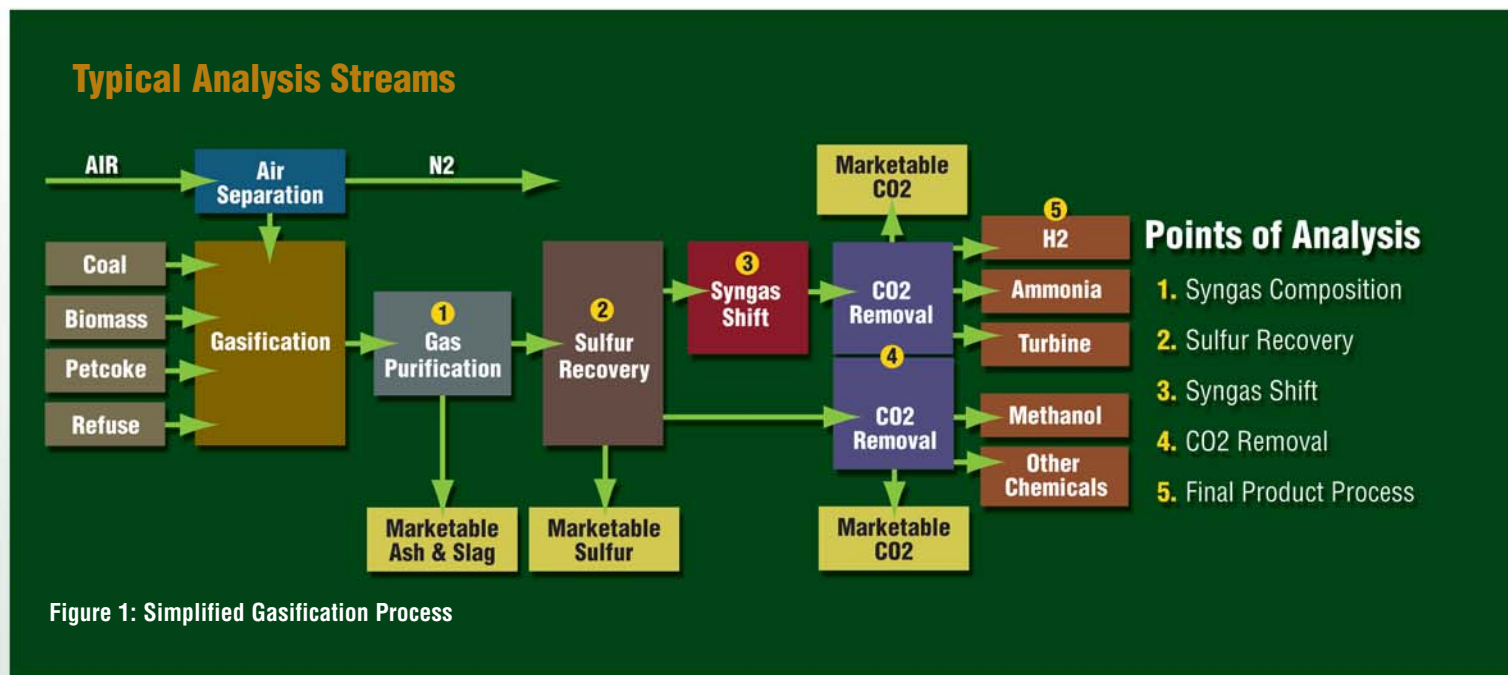


Figure 1: Simplified Gasification Process

# GASIFICATION

## Gasification

Gasification is a process of taking a variety of different raw materials and by-products, such as coal, biomass, petroleum, or biofuel and converting these materials into useable Syngas. Syngas then can be used in a diverse range of applications from creating electricity to manufacturing chemicals. Monitoring the different stages of these processes becomes significantly important to ensure proper combustion, maintain efficiency and identify unknowns and potentially

unwanted by-products. Real-time analysis of all types of Gasification can be obtained using a process mass spectrometer. Fast analysis of multiple streams is necessary so that the plant optimization program can be used to control the Gasification process. The Extrel MAX300 series of quadrupole mass spectrometers analyze between 8 and 12 process streams with a total cycle time of less than 2 minutes.

## Key Application Facts

- Extrel CMS is a worldwide leader in analysis of Syngas-type streams such as those found in the Ammonia manufacturing process.
- The Extrel MAX300 can analyze 8 – 12 streams in less than 2 minutes using the low dead volume multiport rotary valve.
- The Extrel MAX300 utilizes next generation designs for the inlet, ionizer and filament assembly. This extends the life of the filaments, increases time between service and decreases maintenance downtime.
- The Extrel MAX300 supports a variety of industry standard communications including ethernet, bidirectional MODBUS, MODBUS TCP/IP, OPC and analog communication protocols.



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