

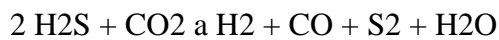
CO₂ Reuse

F. Manenti

Politecnico di Milano, Piazza Leonardo da Vinci, 32, 20133 Milano, Italy
flavio.manenti@polimi.it

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The Acid Gas to SyngasTM (AG2STM) technology is an innovative process to produce syngas starting from two emissions, CO₂ and H₂S. The technology kernel is a regenerative thermal reactor that favors the overall oxy-reduction reaction:



The regenerative thermal reactor is energetically self-sustainable thanks to a minor injection of air or oxygen, according to the final syngas uses, which is fed in premixed mode with the acid gases.

Acid gases undergo a thermal treatment in the regenerative part of the reactor (temperature preferably higher than 1000 °C); hot effluents are partially quenched to remove radical species by recombination reactions and a gas-gas feed/effluent heat exchange recovers the largest part of the heat at the end. The process generates syngas for the largest part, together with elemental sulfur, which has a market, and water, both innocuous byproducts.

If opportunely coupled with conventional technologies, AG2STM allows converting acid gases into liquids such as methanol, ammonia and all the other syngas-based derivatives (Acid Gas to LiquidTM, AG2LTM, technology).

Due to the low invasiveness of the AG2STM technology, plant refurbishing are cheap and relatively fast. First industrial applications are ongoing in Europe on oil refineries, geothermal power generation plants, and methanol synthesis plants.