

HP-HiGAS TECHNOLOGY

An Innovative Process Intensification Technology

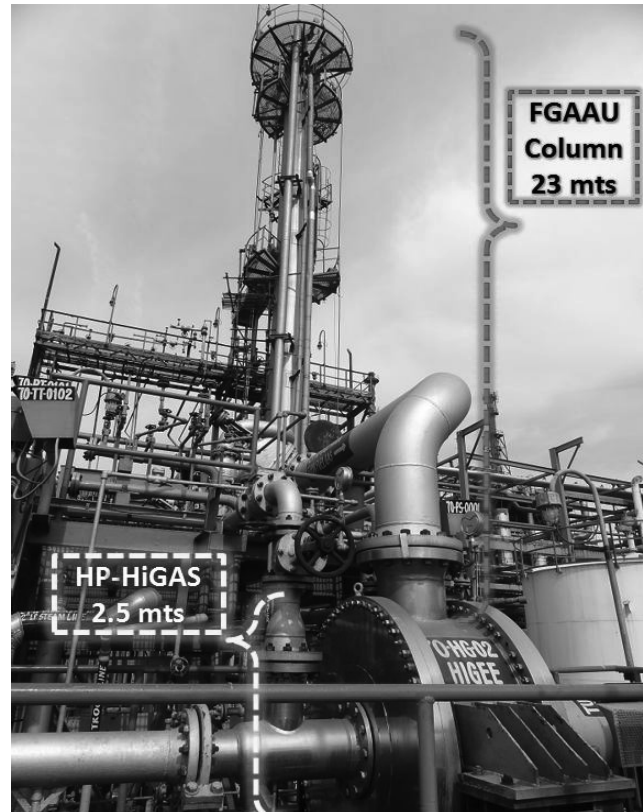
“HP-HiGAS’ is a path breaking technology in the refining industry based on the novel concept of Process Intensification.

HPCL has pioneered research in the process intensification technology in India and has filed Indian & international patents.

A demonstration HP-HiGAS unit for H₂S removal from refinery fuel gas has been set up at Visakh refinery and is successfully being operated with targeted specifications.

HP-HiGAS technology is based on intensifying the mass transfer processes by using rotating packed beds. A rotating packed bed can induce centrifugal forces over 100 times that of gravity which is the main driving force in conventional columns. This high driving force greatly improves the mass transfer rates between the liquid and gas and reduces the HETP by about 50-100 times thus significantly reducing the unit size.

Fuel Gas Amine Absorption unit at Visakh Refinery has a conventional tray column of 23 meter height which was replaced by HP-HiGAS unit of 2.5 m height. Size reduction up to 10 times of the process equipment is the remarkable achievement of this technology.



The primary benefits of this technology include substantial reduction in plant footprint, lower investments and variable costs. Other potential advantages are increasing productivity and energy harvesting, achieving sustainable manufacturing and improving process safety. The technology helps companies gain a decisive advantage over their competitors, in terms of both cost competitiveness and sustainable safe operation.