

Ionizing Wet Scrubber (IWS) Removes Both Acid Gases and Submicron Particulate

A major multinational Optical Fiber manufacturer recently established a Chinese-USA joint venture plant in Jiangsu Province, China. Verantis was contracted to design, manufacture and install a customized scrubbing system to treat the exhaust gas from the client's VAD and etching process.

The treatment system comprises of an IWS gas cleaning system for treating the VAD exhaust emissions and a HF scrubber for treating exhaust gases from the Etch process. System is designed to meet Chinese GB Emission Standards.

The waste exhaust gases from the VAD process are directed into the IWS gas cleaning system. The waste gases contain very fine SiO₂ particulates, acidic gases (HCl and HF) and a small amount of Cl₂ gas coming from a separate vent. The hot gases are first saturated with water in the Quench Chamber to cool the gas to its adiabatic saturation temperature (approximately 65°C). The cooled gases are pre-scrubbed with alkaline water in a Verantis HRP-50-60 packed bed cross-flow scrubber to separate out larger sized particulates from the gas stream. After pre-scrubbing, the exhaust gases are treated in a two-stage IWS-450 ionizing wet scrubber to separate out essentially all of the fine particulates.



Application	VAD emission control	Etching emission control
Exhaust Volume	12,240 m ³ /h , 160 oC	20,400 m ³ /h,
Contaminant	SiO ₂ -7.3 kg/h HCl-3055 ppm(v) HF-57ppm(v) Cl ₂ -56ppm(v)	HF- 200 ppmv
Emission	SiO ₂ -20mg/m ³ HCl-13mg/m ³ HF-1.4mg/m ³ Cl ₂ -3.3mg/m ³	HF-1.4 mg/m ³
Scrubbing Solution	NaOH	NaOH
Materials of Construction	Alloy, FRP	FRP