

H2SO4
 HCL
 Density
 FeSO4
 Slurries
 Desulfurization process, Lime stone slurry density
 TMAH

Application Notes



● Introduction

This application FGD (Flue Gas Desulfurization) is a technology used for removing sulfur from the exhaust flue gasses emitted in coal and oil burning power plants.

The density of the process slurry (Lime stone) is measured continuously in real time for optimizing the desulfurization process cost by efficiency improvement and reducing waste.

Contact-less Brasten Density analyzers are the perfect alternative of the Nuclear gauge to avoid Government regulations required for handling a nuclear isotope and reduce the high users cost of this technology. Further with the Brasten technology you avoid a lot of difficulties to use non-contact-less sensors as Coriolis meters with possible damages dues to complex flow paths (bypass) which may lead to either blockages and erosion.

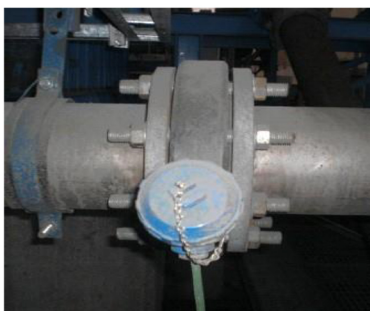
● Ultrasonic Hybrid technology

Non-intrusive inline density meter with a minimum of installation and no maintenance.

The abrasive and corrosion resistant sensor

The Brasten Model 9690 density analyzer is a material, standard PEEK, well protects the internal elements, which take care of transmitting and receiving a broad spectrum of ultrasonic sound waves. Through the interaction of the sound between the contact surface and the fluid (slurry) the acoustic impedance (Z) is measured, without the need for the sound to pass through the fluid. From here by making use of the physical law from Sir Rayleigh the density is calculated.

The composition, particle size and other properties have no influence on those results.



of

The Chemicals Analyzer of the Future

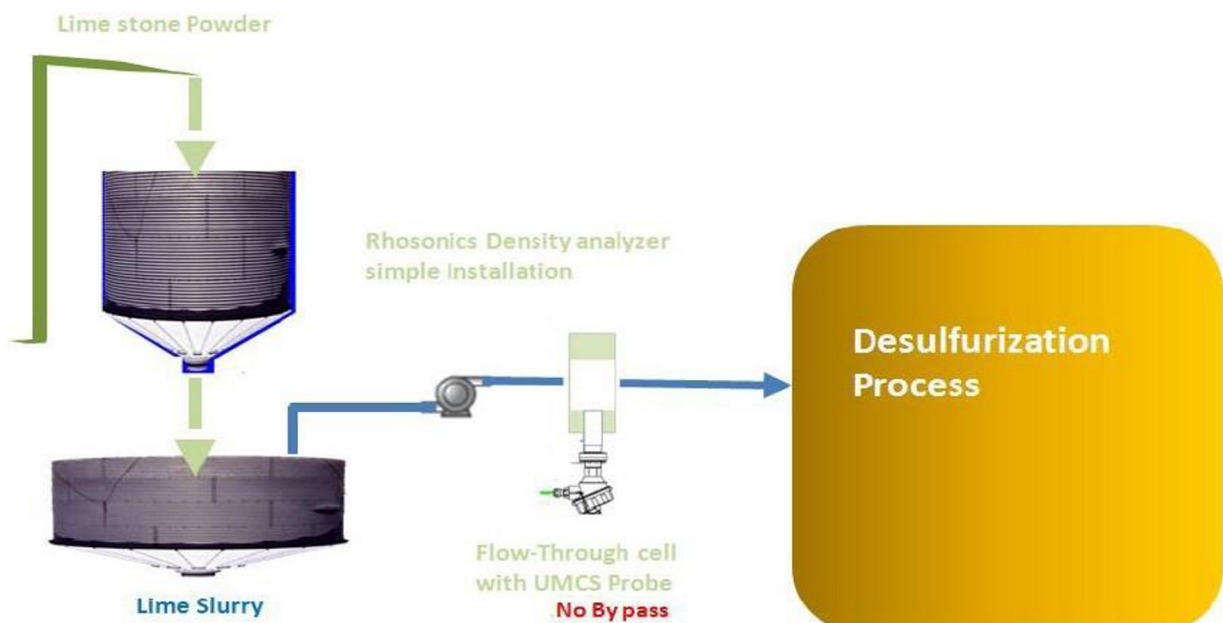
• Sensor installatie

A wafer and UMCS sensor are suitable for installing in process line and intended for installation between two flanges. As such, it forms one integral part of the pipe, without any obstructions that can disturb the flow of the product to be measured.

When it's necessary to measure in a tank we making use an UTP hybrid tank probe. This sensor can be mounted top-down or side mounted. For side mounting it's also possible to use an UMCS sensor.

The focus of this analyzer is to optimize your ratio water/lime powder in real time. The Brasten density Analyzer provides excellent payback without cost of ownership! as a Nuclear Gauge; Disposal cost of source, Licensing and regulation and safety control at side. Or Coriolis meter; different particles, cause damage to the sensor and high flow rates can cause erosion on the sensor.

With the Brasten ultrasonic density technology you are free of all those costs and disturbance.



• Specifications

Method	Hybrid Ultrasonic Spectroscopy
Density range	Auto ranging 500 ... 3000 g/l
Temperature	-10 ... 110 °C
Readout	Density, Temperature and SG
Accuracy	+/- 0.005 (S.G.)
Response time	< 1 to 60 s (adjustable)
Analog outputs	(2x) 4-20 mA (+/- 0.02%)
Alarm output	(2x) SPDT, Hi-Hi, Lo-Lo
PLC digital	Modbus through RS-485/RS-422
Data logging	1 year via USB memory stick
Options	Profibus DP Hart 4 wire protocol Ethernet TCP/IP (through web server)
Housing	WPF-TOD Painted steel IP-65, 300x320x120 mm. 316-TID 300x320x120 mm, IP-65 SPLT Split unit housing
Power	90-240 VAC, 10 Watt 24 VDC, 10 Watt
Sensor	UMCS sensor for flow through cell, Wafer or tank side mounting. UHP tank probe top-down mounting.
Installation	UWC Wafer cell for mounting between two flanges (ANSI or DIN code) in steel or UHPE. UFTW sensor cell for pipes < 3 inches. UFTC steel flow through cell/

• Continuous in-line monitoring & Process control

• The Solution Specialist

The mission of Brasten Analytical is to provide solutions for In-line concentration analysis of virtually all existing process liquids, including electrolytes, emulsions, suspensions and slurries.

For almost two decades, Brasten Analytical has been focusing on the development and employment of high-performance ultrasonic technologies for in-line liquid concentration analyzers and non-destructive testing of materials.

Our products

- ❑ In-line concentration analyzers for virtually all existing process liquids, including solutions, electrolytes, emulsions, suspensions, solids and slurries.
- ❑ Piezo composite transducers for Ultrasonic NDT (Non-Destructive Testing) for new inspection methods, including ToFD and Phased Array.

• Contact

The Solution Specialist

Brasten Analytical is The Solution Specialist for the design, production and supply of ultrasonic in-line process analyzers for liquids and slurries in any industry world wide.

Brasten Engineers & Consultants Pvt. Ltd., India

Brasten Analytical Far East Co. Ltd., Thailand

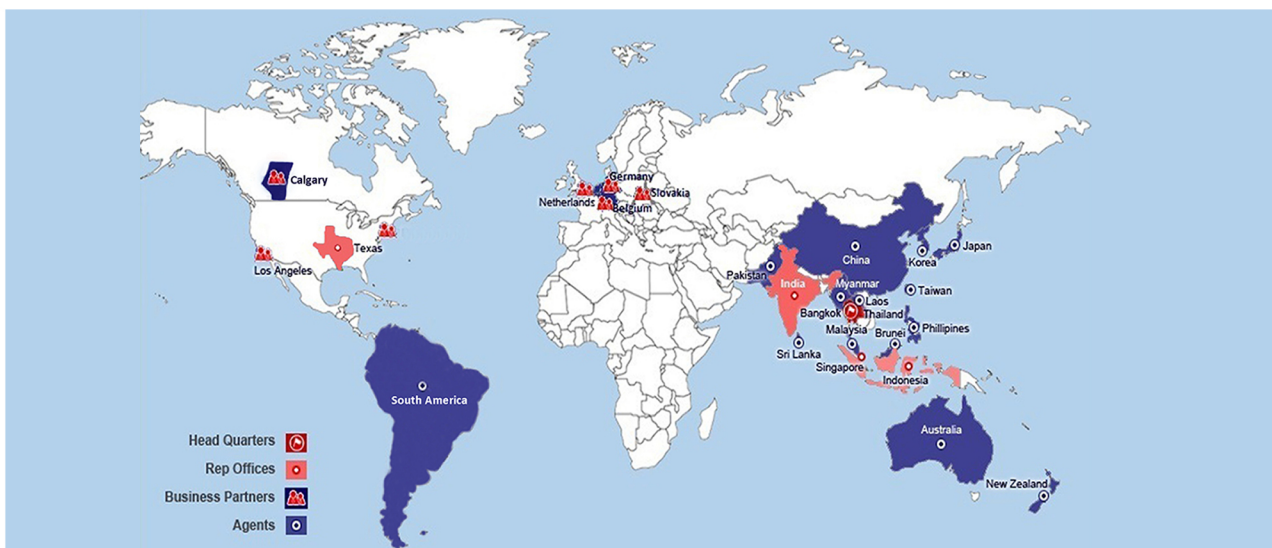
Email ID: info@brasten.com

Website: www.brasten.com



Worldwide distribution

Please check our website for more details.



Rhosonics Analytics- A Brasten OEM Product