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ACHEMA 2015 Press-Release
For Immediate Release

AP2E INTRODUCES "PROCEAS® H2" FOR DIRECT CONTINUOUS MEASUREMENTS OF HYDROGEN

ACHEMA 2015 takes place from 15th to 19th June 2015 in Frankfurt am Main. At booth A33a (hall 11.0) AP2E will present the ProCeas® H2 Trace analyzer. The first device in the world able to measure hydrogen in infrared by resonant cavity laser spectroscopy. The "ProCeas® H2 Trace analyzer" enables direct continuous measurements of low level of hydrogen in chlorine matrix or other gas for real-time monitoring and control of industrial processes. This instrumentation enables a quantitative monitoring with LOD up to 3ppm.

Depending on the concentration, a mixture of H2 and Cl2 and chlorine gas can be flammable or explosive. For this reason hydrogen needs to be monitored continuously in order to keep the gas composition within the flammability limits but direct observation of hydrogen is difficult. Current technologies that use infrared spectroscopy allow only an indirect measurement of hydrogen in chlorine. Indeed, the method consists in measuring by infrared spectroscopy the hydrochloric acid formed by addition of hydrogen and chlorine in a burner at high temperature. This technique is laborious and prone to inaccuracies.

THE PROCEAS® H2 TRACE ANALYZER AN EASY-TO-USE SOLUTION

AP2E has developed and deployed an innovative high resolution laser-based gas analyzer for rapid online measurement of low level of hydrogen in chlorine matrix with very high sensitivity, selectivity and accuracy. The ProCeas® H_2 trace analyzer is based on a patented cavity enhanced laser absorption spectroscopy technique OFCEAS (WO 2003031949) and a patented low pressure sampling system (W0 2010058107).

- OFCEAS is an infra-red light laser technology-feedback providing an exceptional and extremely high precision analytical performance (from sub PPB to %) in both simple and complex gas mixture. Its feedback technology gives the equivalent of a digital spectral response of the absorption of the analyzed gases. An optimized resonant optical cavities technology generates a very long optical path (10 km instead of the 10 meters in conventional FTIR and NDIR technologies).
- The low-pressure sampling system for gas extraction and transportation allows to avoid the condensation phenomenon, the risk of chemical absorption/desorption as well as the cost for heated sample gas line. This device allows a low maintenance while maintaining a very short response time of only a few seconds. The measurement can be done as well in low pressure than in atmospheric pressure as it is the case in this application.

LASERCEM ®IN ACHEMA 2015

In Achema AP2E will also present the "**LASERCEM®**" an easy-to-use solution for CEM'S on-line gaz analysis. The LaserCEM is a complete pre-calibrated multi-component (NO, SO2, CO, HCl, CO2, H2O, H2S, NH3, N2O, COS, SO3, CH4, HF) laser infrared spectrometer for CEM's analysis: waste incinerators plants, refineries, cement plants.

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LASERCEM ANALYTICAL SPECIFICATIONS

Gas	Range[a]	LOD[b]
SO_2	0 to 25 ppm / 0 - 75 mg/m³	0.22 ppm
NO	0 to 60 ppm / 0 - 80 mg/m³	0.09 ppm
HCl	0 to 10 ppm /0 - 15 mg/m³	0.01 ppm
NH_3	0 to 10 ppm /0 - 15 mg/m³	0.01 ppm
CO	0 to 60 ppm /0 - 75 mg/m³	0.22 ppm
H_2O	0 - 40% Vol	0.1%
O_2	0 - 25% Vol	0.05%
CO_2	0 - 20% Vol	0.06%
SO_3	0 to 25 ppm /0 - 80 mg/m³	0.20 ppm
N_2O	0-100 ppm /0 - 200 mg/m³	0.09 ppm
CH_4	0-100 ppm /0 - 75 mg/m³	0.11 ppm
NO_2	0-25 ppm /0 - 50 mg/m³	0.08 ppm
HF	0-10 ppm /0 - 10 mg/m³	0.01 ppm

Response Time	< 200 seconds.
Zero Drift :	none

ABOUT AP2E

Since 2006, AP2E (**www.ap2e.com**) is a major player in the on-line gas analysis for environment and industrial processes. More than 400 analyzers have been sent around the world. By the end of 2010, after two years of R & D studies, the AP2E ProCeas® was the award recipient of the USA "R & D 100" which rewards the 100 most innovative global technologies of the year.
The ProCeas® application range is large. R&D activities enables the definition of designs adapted to about 30 industrial gases, sharing a number of common elements, which allows a streamlined industrialization of them.

SOME CUSTOMERS REFERENCES

In France: Air Liquide Areva, Arkema, Artélia, BUTACHIMIE, CEA, CLEMESSY, CNRS, Eau & Industrie, Esso, DGA, DCNS, Fives Pillard, GDF SUEZ, Véolia, Total, SAVE, SIMTRONICS, Novacarb.

Abroad: Creative Oxygen, ELEKTRONIC KONTOR, Exxon, Hobré Instruments BV, Michell Instruments, MIDREX, Nestlé, PRAXAIR, Siemens, Sensors-Inc., Fire & Gas, Terrabon…

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