Press Release

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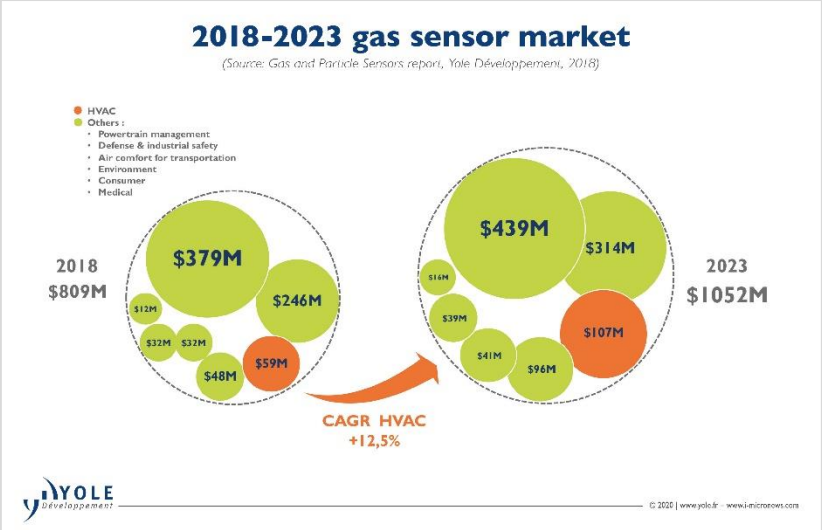
Sensor makers are becoming a growing interest for the HVAC sector[1]

OUTLINES:

- Air quality is a global concern...
- HVAC: trends are to move from one sensor with one measurement to a smart combination of several measurements, the combo sensors…
- Gas sensor market for HVAC applications will reach US$ 107 million in 2023.
- SCD30, a humidity, temperature and carbon dioxide concentration sensor, is the first solution proposed by Sensirion, especially developed and designed for HVAC applications.

The gas sensor market for HVAC[2] applications is showing one of the most important growths within the overall gas and particles industry, between 2018 and 2023. Indeed, Yole Développement (Yole), the market research and strategy consulting company, has forecast a US$ 107 million market in 2023 with an impressive 12.5% CAGR[3] between 2018 and 2023.



[1] Extracted from :

- Sensirion SCD30: NDIR CO2 and humidity sensor report, System Plus Consulting, 2020
- Gas and particle sensors report, Yole Développement, 2018
- Particle Sensors Comparison 2019 report, System Plus Consulting
- Miniaturized gas sensors patent landscape report, KnowMade, 2018

[2] HVAC : Heating, Ventilation and Air-Conditioning
[3] CAGR : Compound Annual Growth Rate

During the same period, Sensirion, manufacturer of sensors for the measurement and control of flow and environmental parameters released a humidity, temperature and carbon dioxide concentration sensor, the SCD30. This device is the first solution offered by the Swiss company especially developed and designed for HVAC systems. It announces the entrance of Sensirion within this growing market segment and more HVAC sensors will follow (Example: the announcement of the SCD40 in May 2019) …

This interest is not only illustrated by Sensirion and its latest developments. Indeed Knowmade, in its Miniaturized gas sensors – Patent landscape, has seen a big increase in patenting activity related to miniaturized gas sensors in 2017-2018. This evolution within all gas sensor market segments, including HVAC, is mainly due to new inventions from Bosch, AMS, NGK, Sensirion and new entrants such as MicroJet Technology, Spirosure, Carrier Corporation, LG and Apple. The patent filings currently pending reflect a particular interest by the competitors in European and Chinese markets. Historical IP players Siemens, Honeywell and General Electric have the strongest patent portfolios, especially Siemens, which illustrates the most important contribution to the prior art in the field of miniaturized gas sensors...

The reverse engineering and costing company, System Plus Consulting, offered today a detailed structural, process & costing report focused on Sensirion's SCD30, a competitively priced miniature carbon dioxide, relative humidity and temperature sensor combo: Sensirion SCD30: NDIR CO2 and humidity sensor.

"Sensirion has developed a thermopile die based on its air flow sensor technology, called CMOSens®." says **Sylvain Hallereau, Senior Cost Analyst at System Plus Consulting.** *"This technology allows integration of CMOS digital and analog functions with a very thin membrane manufactured in the metal layer".*

The added value of the CO_2 gas sensor technology is not only due to the use of silicon. Packaging and IR[4] filters are also very important for the accuracy of the measurement.
The module embeds the SHT31 humidity sensor of Sensirion with an ultra-low power microcontroller from STMicroelectronics to control the module and communications.
With a CO_2 gas, humidity and temperature sensor, the SCD30 module gives all the environmental data for HVAC, making it smarter. With a small package volume under 5.6cm^3, this CO_2 gas sensor can be clearly integrated into HVAC installations… The new gas sensor report from System Plus Consulting will probably spark lot of interest and curiosity among the community of sensor and HVAC systems manufacturers.
System Plus Consulting's report includes a dedicated technology and cost analysis of the combo. All the main parts of the sensor are studied, including the humidity sensor, the other module parts and the assembly. Pictures and cross-sections for the electronic components and for the module are shown. These analyses provide the technical intelligence necessary to understand this technology.
The Sensirion SCD30 report is part of a complete collection of gas sensor reports offered by Yole Group of Companies: Gas and particle sensors technology & market report from Yole, Particle sensors comparison, from System Plus Consulting and Miniaturized gas sensors – Patent landscape from KnowMade.
The three companies continuously work closely together to investigate the gas and particle industry and provide an in-deepth understanding of the latest technical innovations, market issues and patent activities.

HVAC seeks to reduce air extraction and limit energy consumption. But good extraction is also important to limit humidity and CO_2 concentration and ensure well-being. This evolution is fully part of the smart building era. Making HVAC systems smarter with high added-value sensors, is key, today.
Sensirion is following the evolution of the industry and for the first time offers a sensor combining several parameters, ideal for HVAC applications. The Swiss company offers an impressive gas sensors portfolio for numerous applications, with their MOX gas sensors.
The release of the SCD30 solution shows Sensirion's strategy to penetrate the HVAC market segment. Today only a few companies share this market…
Sylvain Hallereau from System Plus Consulting comments: *"SD30 from Sensirion is not based on a new technology. In fact, with SCD30, the company has made a really nice development by using existing and mature technologies-though improved to a higher level. This approach is really smart as it allows Sensirion to penetrate a new market segment. From a technical point of view, challenges were mainly focused on the combination of all parameters, ensuring accurate measurements and reliability. They were also focused on the selection and the development of a dedicated packaging."*

[4] IR : Infra Red

Yole Group of Companies pursues its investigation all year long and expects to release new reports dedicated to the gas and particle industry. The full collection of reports is available on i-Micronews.com. In addition, analysts invite you to watch a dedicated recorded webcast: Smelling out the air quality market!
Stay tuned on i-Micronews.com!

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About the reports

Sensirion SCD30: NDIR CO2 and humidity sensor

Competitively priced miniature carbon dioxide, relative humidity and temperature sensor combo - Performed by System Plus Consulting

Gas and particle sensors

Air quality is breathing life into the sensor market!, Market & Technology report - Performed by Yole Développement

Particle Sensors Comparison 2019

Comparison of seven particle sensors for consumer applications made by Honeywell, Nova Fitness, Plantower, Sharp, Shinyei Technology and Sensirion, Performed by System Plus Consulting

Miniaturized gas sensors

Miniaturized gas sensors will increasingly be used in HVAC, air comfort for transportation and consumer applications. But do the key gas sensor market players have the best IP positions?, Patent landscape analysis – Performed by KnowMade, 2018

Authors

Sylvain Hallereau is senior cost analyst, in charge of costing analyses for IC, power and MEMS at System Plus Consulting.

Dr Youssef El Gmili is laboratory analyst and has in-deepth knowledge in the study and analysis of semiconductor materials at System Plus Consulting.

Audrey Lahrach is cost analyst, in charge of costing analyses for IC, LCD & OLED Displays and Sensor Devices at System Plus Consulting.

Véronique Le Troadec is laboratory engineer at System Plus Consulting. She has extensive knowledge in failure analysis of components and in deprocessing of integrated circuits.

Yvon Le Goff is a laboratory manager, who has joined System Plus Consulting in 2011, in order to set up the laboratory for System Plus Consulting.

About System Plus Consulting

System Plus Consulting specializes in the cost analysis of electronics, from semiconductor devices to electronic systems. Created more than 20 years ago, System Plus Consulting has developed a complete range of services, costing tools and reports to deliver in-depth production cost studies and estimate the objective selling price of a product. System Plus Consulting engineers are experts in Integrated Circuits - Power Devices & Modules - MEMS & Sensors - Photonics – LED - Imaging – Display - Packaging - Electronic Boards & Systems. Through hundreds of analyses performed each year, System Plus Consulting offers in-deepth added-value reports to help its customers understand their production processes and determine production costs. Based on System Plus Consulting's results, manufacturers are able to compare their production costs to those of competitors. System Plus Consulting is a sister company of Yole Développement. More info on https://www.systemplus.fr/ and on LinkedIn and Twitter.

About Yole Développement

Founded in 1998, Yole Développement (Yole) has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services, & technology trends to grow their business… More

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