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H₂appy New Year with gas analysis from Archigas !

2025 begins - and our new ATEX screw-in is at the start. We're really looking forward to spending time with you 😊

Have you had a good start to the new year? We hope so - and wish you all a healthy, happy and successful 2025!

So now we can get started. Of course, you wonder what the year will bring: How will the world in general develop? And how will our industry develop in particular? Well, we can only guess at the first question, but we would advise you to be more resilient. The answer to the second question is easier: the development of hydrogen as an energy source will continue to make great strides in 2025 and, like you, Archigas will continue to be part of the journey. We are really looking forward to this year with you!

It's already off to a good start, a really good start: right at the beginning, we can present our unique gas analysis in a new screw-in version with ATEX certification. It not only meets, but far exceeds, what the industry wants and hopes from hydrogen measurement.

Find out more about this innovation and the latest developments at our company in this newsletter. Archigas is ready for 2025!

Yours, Illya and Wladimir

In this edition:

World first TCD3000 SiA - the H₂ gas analyzer from Archigas is now available in screw-in form with ATEX Zone 1 certification!

Back with innovation at the "Hyvolution" - Archigas presents itself at the place where it all began.

Renowned sensor expert - Prof. Friedemann Völklein becomes co-partner.

Archigas news compact - Archigas presents itself: new website and numerous event participations.

World first: ATEX screw-in gas analyzer TCD3000 SiA is here!

Plant engineers around the globe have been eagerly awaiting it – now it's available: an H₂ gas analyzer from Archigas as a screw-in version with ATEX Zone 1 certification! TCD3000 SiA is the name of the ultra-compact measuring device based on the company's award-winning innovative sensor technology – for particularly fast, precise, stable and even moisture-resistant hydrogen measurement directly in the process and in safety-sensitive environments.



Industrial producers and users have long been aware of this, of course, and occasional incidents also make society aware of it: the first prerequisite for a hydrogen ramp-up is the safe and reliable handling of the highly flammable gas. Consequently, H₂ measurement is of fundamental importance, which is why there is a great desire for optimum hydrogen detection solutions at various points in the process chain.

With its unique technological solutions for particularly fast (less than 30 milliseconds), high-precision, stable and even moisture-resistant detection, de-

veloper Archigas has achieved a breakthrough for even safer and more profitable hydrogen extraction, according to scientists and users. The latest quantum leap is the first screw-in type with ATEX certification – it now complements the range of H₂ gas analyzers from Archigas. The new product is available with the designation TCD3000 SiA in the specifications Ex II 2 G Ex db IIC T4/T3 Gb, -40°C to +90°C/+125°C for ATEX ZONE 1.

“This innovation precisely meets the highly specific needs of numerous interested parties from all over the world and from a wide range of H₂ industries,” said Archigas Managing Directors Illya Kaufman and Wladimir Barskyi at the premiere end of October in Hamburg. “With this ATEX screw-in version, we are consistently expanding the application possibilities of our technology. The design as a flameproof enclosure saves users additional, costly integration measures. In this product, we have realized down to the last detail what H₂ producers and users from various application areas have been longing for. Without wanting to exaggerate, it now gives many plant manufacturers the opportunity to think in a completely new way,” say the developers.

The latest device variant from Archigas is also based on the company's measurement technology, which was presented for the first time last year and which innovatively implements the predestined thermal conductivity measurement principle in a new technical way and combines it with semiconductor technology. Detailed information on the features of the system in general and the TCD3000 SiA in particular is available on the new Archigas website (see also the newsflash at the end of this newsletter) .

La révolution de Paris!

For Archigas, the upcoming “Hyvolution” is a very special event

As the saying goes: Paris is always a good idea! Archigas agrees - and will be presenting its latest developments at the renowned H₂ trade show “Hyvolution” from January 28 to 30. The star at booth 6DI3A will be the new TCD3000 SiA gas analyzer in ATEX screw-in version. The makers of Archigas are returning to the place where they first came up with the idea for this revolutionary invention.



Paris is known to be predestined for groundbreaking events. This is also true in the case of Archigas: it was here in the Seine metropolis, during a spontaneous visit to “Hyvolution” five years ago, that the later founders came up with the idea of decisively advancing gas analysis and hydrogen measurement in particular. “Walking around the trade fair, which was much smaller at the time, and talking to engineers at the stands, we heard again and again that H₂ detection was causing major problems for plant manufacturers: often imprecise, slow, prone to defects, complicated, bulky and expensive - that was the general tenor. That's when it clicked and we realized what we had to do: create a completely new and better solution for H₂ gas analysis,” recalls

the physicist and founding duo Wladimir Barskyi and Illya Kaufman.

After intensive research and development work, Archigas 2023 presented its measurement technology for the first time, which has been characterized by scientists and users as groundbreaking and has since won several awards (including the Hermes Startup Award). The latest product variant, the TCD3000 SiA in screw-in form with ATEX certification, which recently celebrated its premiere at the “Hydrogen Technology Expo Europe” in Hamburg, is also based on this technology (see also news item above). It will also be the focus of the upcoming presentati-

on at “Hyvolution 2025” from January 28 to 30 at the Porte de Versailles in Paris.

“With the new TCD3000 SiA gas analyzer, we are now

returning to its actual birthplace, so to speak. This is something very special for us. Because with this device option, we have kept the promise we made to ourselves years ago in the same place: to develop an optimal solution for measuring hydrogen that meets and even exceeds the high demands of the modern H₂ industry. The great efforts have therefore paid off, and we are very grateful to everyone who has supported us in this, such as the Rhein-Main University of Applied Sciences, our excellent team and, last but not least, the first users from all over the world,” say Barskyi and Kaufman.

Sensor expert Prof. Dr. rer nat. habil Friedemann Völklein joins the Archigas core team

Having supported the company in word and deed from the very beginning, the internationally renowned microtechnology expert Prof. Dr. rer nat. habil Friedemann Völklein is moving even closer to Archigas as a minority shareholder. He advises the company in a highly competent manner with scientific expertise and is a firm pillar in design and technology development .

Prominent support for Archigas: In recent years and decades, Professor Völklein has worked as a scientist at ETH Zurich and as a professor at the RheinMain University of Applied Sciences (HSRM). The founding and management of the Institute for Microtechnologies (IMtech), with which he is still closely associated today, are important milestones in his professional career. Völklein has also received numerous awards such as the Cooperation Prize of the Hessian Ministry of Economics and Transport, the Georg Simon Ohm Prize of the German Physical Society and the Research Prize of the Hessian Universities of Applied

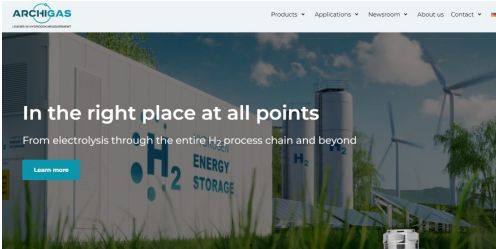
Sciences.

“Much more important to me than the title and honor is to establish microsystems technology with full commitment: now also as a key technology for applications in the growth field of hydrogen technology. I want to make a contribution to the energy supply of future generations and can effectively contribute my know-how here at Archigas,” says Völklein about his commitment as Scientific Advisor. Alongside Archigas chief developer Illya Kaufman, development engineer Patrick Römer and product developer Tom Burkard from the R&D team are looking forward to continuing their intensive collaboration with the internationally respected sensor expert, whose solutions are not only used on Earth, but also in space. “Beyond the technological aspects, the entrepreneurial spirit and the young, competent team here at Archigas are very inspiring. The close cooperation is also a great pleasure. In short, the conditions were and are ideal in many respects. So we can continue just as successfully as we started about three years ago,” says Völklein.



Prof. Völklein (center) as part of the Archigas team

Archigas news compact



The TCD3000 SIA H₂ gas analyser

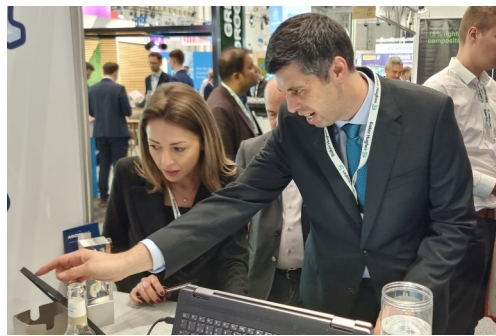
The screw-in analyser with microsensor technology enables precise and fast analysis of binary gas mixtures (e.g. H₂ in O₂) by means of thermal conductivity measurement. With a response time of <math>< 30\text{ ms}</math>, a measuring range from a few ppm to 100 vol.%, and a functional capability up to 200 bar as well as under humid conditions, it is consistently orientated towards the requirements of the hydrogen industry. Thanks to its long service life, low maintenance, high compatibility and minimal dimensions, it also offers cost, labour and space savings.



+++ **archigas.com**: the new place-to-be for anyone interested in our unique gas analysis solutions! We have **completely redesigned, expanded and optimized our website** at this address. If you want, you can easily get all the information you need around the clock, compact, clear, informative and certainly inspiring. All relevant **data and background information on the innovative gas analyzers** from Archigas can be called up with just a few clicks. Up-to-date descriptions of the technology, its advantages and all specifications are available, as well as manuals and FAQs. It is just as easy to find what you are looking for via the **various application areas** such as electrolysis, fuel cells, H₂ in natural gas, leakage and others; news, company information and convenient contact options round off the offer. We look forward to your virtual visit! +++

+++ Archigas on tour! **One event highlight followed the next in recent weeks and months.** In addition to the "Hydrogen Technology Expo Europe" in Hamburg (see message above), we also visited the Italian **trade shows in Verona and Piacenza, the Hessian Innovation Congress and the Fuel Cell Forum** in Frankfurt and Darmstadt, presented our H₂ gas analyzers and held numerous discussions with players from various areas of the hydrogen industry. We also stopped by the **Hydrogen Village at the Bitterfeld-Wolfen Chemical Park** to see once again how many points in the process chain Archigas solutions can be optimally applied. In November, we met numerous interested **parties from France at a meeting organized by the AHK Chamber of Commerce Abroad.**

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