

Exploring New Markets for Optical Particle Measurement

Pamas Celebrates 20th Anniversary

Rutesheim. On June 1st, 2012, the German company PAMAS GmbH, focused on particle measuring and analysing systems, celebrates its 20th anniversary. PAMAS develops, manufactures and distributes liquid particle counters and currently has employees stationed at nine company locations worldwide. Owner, Gerhard Schreck believes two key factors are the reason behind the success of his company: the ongoing development and upgrades to existing systems and software and the continuous exploration into new markets and trading areas.

Managing Director Gerhard Schreck had early recognised that only through extension of the corporate know-how, the company would be able to reach and maintain a market leading position in the sector of analysing technology. "For this reason, soon after establishment, we started to focus on development", Gerhard Schreck explains. "Having our own department for Research and Development, which is situated at the PAMAS head office in Germany, we are able to take a bearing on market demands and to develop new products for new fields and applications. Over the course of the past two decades, we have evolved and modified new developments to meet customer demands rather than limit ourselves to technical capability. So we succeeded in exploring new markets where particle measuring technology had not been applied before."

Various application fields of particle measurement

One example is hydraulic systems

within the offshore industry. In this sector, until the end of the 1990s, the cleanliness of hydraulic fluids usually was tested through microscopic membrane analysis. This analysing procedure requires a lot of time and work: at first, a defined liquid amount is filtered through a membrane and afterwards analysed manually or automatically under the microscope. Apart from the extended time and labour factors, membrane analysis also has another key disadvantage compared to optical particle measurement: the counting procedure is very subjective, this is because it is solely based on the operator's evaluation. For this reason, customers running offshore oil rigs were interested in alternative measuring techniques compensating the numerous uncertainties of microscopic membrane analysis. A customer acted as an opener and began to use the PAMAS S4031 WG particle counter alongside routine membrane analysis in order to test the suitability of the particle counter in the field. The test stage was very positive. It was shown that optical particle measurement is able to fully replace the membrane analysis. The size and the quantity of the particles are reported in a trice. The measuring results fully comply with common standards including NAS 1638, SAE AS 4059 and ISO 4406. Same as many other users in the offshore industry, the customer meanwhile has taken proactive measures towards the cleanliness and contamination control of fluid sampling with the aid of an optical particle counter as standard procedure.

Detection of particle sizes ranging from 0.5 to 8000 µm

In the development of new sensor

technologies, PAMAS also fulfills current market demands and application inquiries. Customers in the industries such as pharmaceutical, oil, automotive and filter market for instance have a high demand for particle counters that are able to detect particle sizes smaller than 3 µm(c). From 1992 until 2008, PAMAS' particle sensors worked with the principle of light extinction. These sensors do have a broad detection interval and are able to reliably detect and measure particle sizes up to 8000 µm. As a consequence, light extinction sensors are the ideal equipment for the analysis of high viscous and highly contaminated liquids. However, liquid particle counters are also used for the detection of smaller particle sizes. Due to the increasing demand for the measurement of smaller particle sizes, PAMAS developed in 2008 a sensor working with light scattering technology that is able to reliably detect particle sizes down to 0.5 µm. Since 2009, PAMAS has been successfully installing the new sensor into the particle counter models PAMAS 4132, PAMAS S40 GO, PAMAS S4031 GO, PAMAS SBSS and PAMAS SVSS. The Scattered Light Sensor PAMAS SLS-25/25 measures particle sizes ranging from 0.5 to 20 µm (according to the calibration standard ISO 21501) and from 1.5 to 30 µm(c) (according to the calibration standard ISO 11171).

Specialisation on liquid particle counters

In an effort to offer superior measuring technology, PAMAS's product range is based solely on measuring instruments for liquid analysis. Gas and solid particle counters has been manufactured in

earlier years for clean room and size distribution analyses. Since several years, PAMAS has been offering liquid particle counters only. Besides the use in offshore applications, PAMAS particle counters are used in a variety of different sectors, including lubricating oil systems, water analysis, pharmaceutical applications, filter test rigs and component cleanliness.

Collaboration in standardisation committees

The professional expertise required in optical particle measurement is not only used in the development and manufacture of its own products: PAMAS also makes it available to

numerous standardisation committees. In these boards, PAMAS experts actively contribute to work out sector-specific standards like for instance the standard ISO 11171 for the calibration of automatic particle counters published by the International Organization for Standardization in Geneva.

Success factors for business development

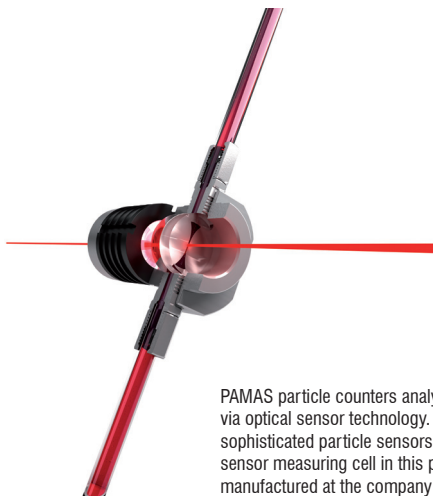
PAMAS employees have been crucial in the success of the company. Many of the employees have been loyally working for the company since the initial years and are part of the corporate image. When founding the company in June 1992, Managing

Director Gerhard Schreck started with three employees. Today, he employs 51 people at nine company locations worldwide. At the head office in Rutesheim, 30 employees are working in the departments of R&D, production, application, service, administration, sales and marketing. 21 further people work in eight additional divisions in Belgium, France, Finland, UK, Spain, Brazil, USA and India.

In years to come, M. D. Gerhard Schreck intends to maintain this course and continue with expansion. Relocation to a new company building is in the planning stage.



The PAMAS S4031 WG is a portable particle counting system for water based hydraulic liquids, mainly used for hydraulic systems in the offshore oil and gas industry. The system can be used for batch and online sampling. For measurements on site, the instrument is also available in the rugged case PAMAS GO protecting the particle counter in harsh environments.



PAMAS particle counters analyse fluid contamination via optical sensor technology. The advanced and highly sophisticated particle sensors (see cross-section of sensor measuring cell in this picture) are developed and manufactured at the company plant in Germany.



Since establishment in June 1992, the PAMAS head office is located in Dieselstraße 10 in Rutesheim close to Stuttgart/Germany.