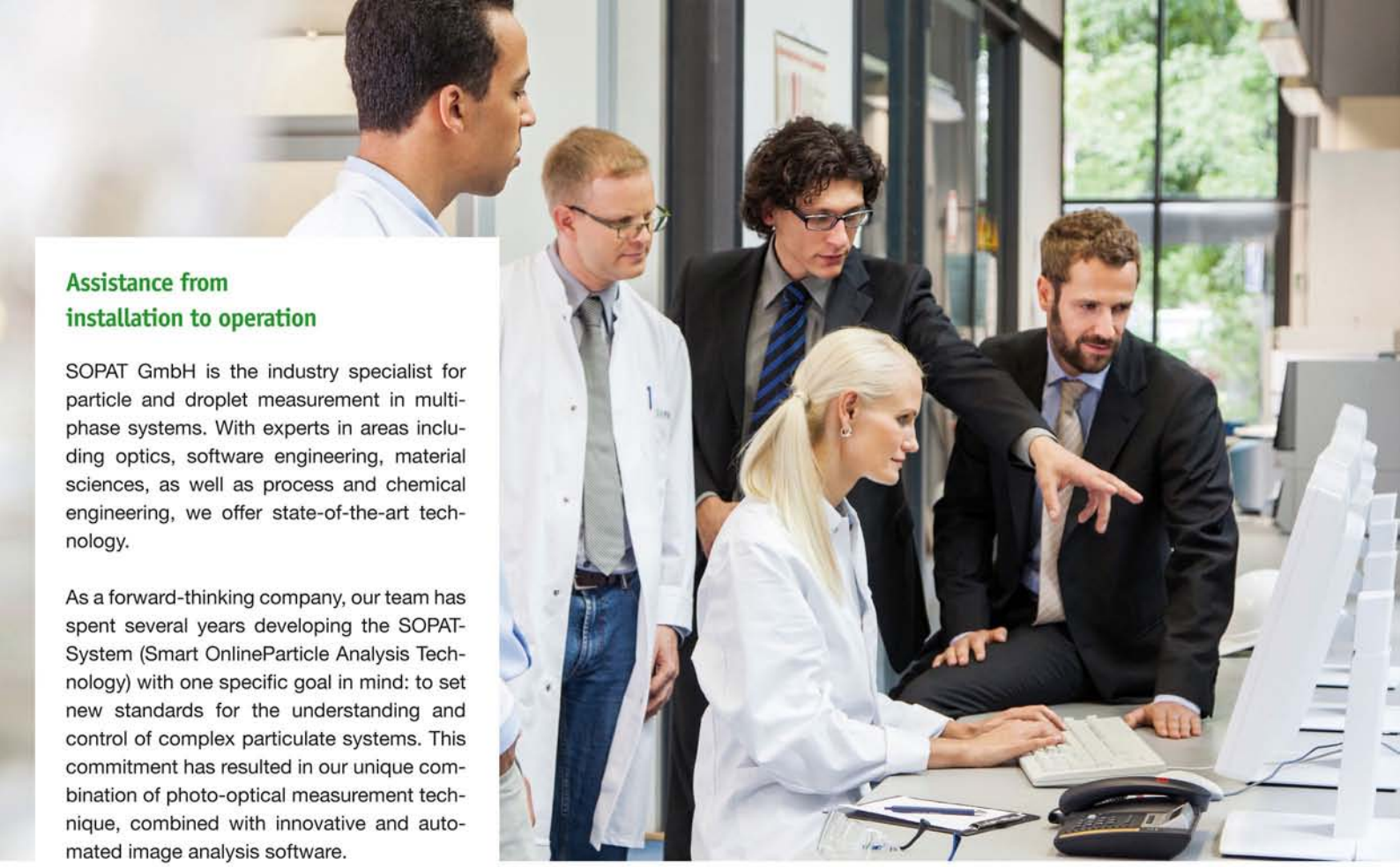
SOPAT
Smart Online Particle Analysis Technology

Emulsions and Dispersions

Online Measurement of Droplet Size

Our technology measures drop and bubble size distribution in ways that, until now, have been impossible, providing real-time feedback taken directly from inside your process. With this information, optimize the performance and yield of your process to its greatest potential! With SOPAT, optimal regulation and control of dispersions and emulsions is finally possible.



Assistance from installation to operation

SOPAT GmbH is the industry specialist for particle and droplet measurement in multiphase systems. With experts in areas including optics, software engineering, material sciences, as well as process and chemical engineering, we offer state-of-the-art technology.

As a forward-thinking company, our team has spent several years developing the SOPAT-System (Smart OnlineParticle Analysis Technology) with one specific goal in mind: to set new standards for the understanding and control of complex particulate systems. This commitment has resulted in our unique combination of photo-optical measurement technique, combined with innovative and automated image analysis software.

Our products and services

- **Complete SOPAT-System for automated particle detection and measurement**
- **Installation, employee training, service and maintenance**
- **Measurement trials on location (laboratory or production)**
- **Analysis of your samples in our laboratories**

Existing particle sizing methods needing external sampling are extremely time-consuming and laborious. The technology and services offered by SOPAT, however, streamline this entire process. Our device, set up and tuned to your specific needs, offers the opportunity to expedite the entire data analysis process, when coupled with our particle evaluation software. This ensures dependable and accurate monitoring of your system, all occurring in real-time, whether it be in the laboratory or a larger, production-scaled process.

The technology offered by SOPAT can also be applied under extreme process conditions: high pressures, temperatures and corrosive environments are no problem. Results are then delivered accurately and in good time to meet the needs of your process. Measurements and data are presented in an intuitive manner and can be analyzed immediately.

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The installation of Sopat equipment is quick and simple and gives you the opportunity to have measurements carried out on site. Alternatively you can have your measurements carried out by us on a contract basis. Send your samples to us, and our experts will analyze them in our laboratories. Testing is carried out professionally and confidentially, ensuring the greatest security of your data.

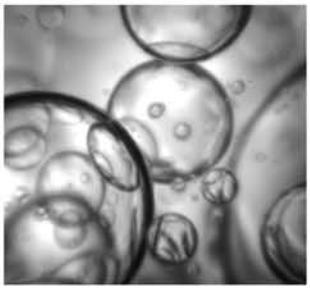
Installation of the SOPAT-VR for the determination of the size of dodecene droplets in H_2O from a mini-plant. >

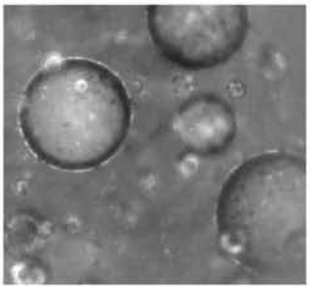
Determination of bubble and drop size distribution

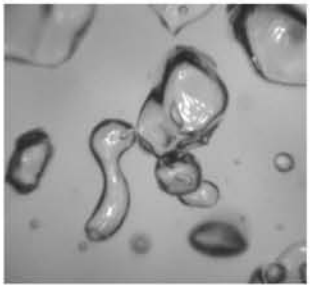
Extraction, emulsification and dispersion processes represent some of the most elementary techniques in process industry. Increasing efficiency can only be accomplished with the knowledge of the drop sizes during the process. Our in-situ measurement technology enables you to accurately determine this information in real-time. By specifying the desired state of the dispersion, you can precisely optimize your extraction process via the corresponding drop size, thus enabling monitoring and quality assurance of the emulsion during production.

It is also possible to control the performance of various continuous flow devices, such as mixers, columns and stirred-vessels, based directly on the drop size distribution present in the feed pipeline. This information ensures the purity of your product streams, which can be monitored at any moment.

Aerating a process is expensive. The most efficient operation of these types of processes can only be realized by optimizing bubble size distribution. SOPAT is able to provide you with this information at a moment's notice, making it possible to significantly improve efficiency, thus reducing operation costs. The speed of reactions occurring within bubble columns is often limited by the size of these bubbles. Monitor and control the bubble size distribution of your process with SOPAT-Technology at all times, ensuring satisfaction of both you and your customers.







< Dodecene in H_2O aquired in a mixer settler, heavy oil in an Aniline/Iron oxide suspension, air bubbles in H_2O.

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Technology – precision via image analysis

SOPAT-VR is an in-situ microscope coupled with automatic image analysis software. This technology enables real-time analysis and evaluation of particle size distributions for systems ranging from 1 to 10,000 µm. Our approach ensures a fully-automated and controlled process.

- **Immediate error and fault detection**
- **Reduction of waste**
- **Better understanding of the process**
- **Improved process efficiency and reliability**

Our user-friendly software comes pre-installed on a high-performance workstation, specifically selected to fit your application. The operation of the software is carried out using a clearly structured, easy-to-use, graphical user interface, providing a visualization of the various particle diameters and their size distribution. This provides you the ability to analyze even the smallest of particles.

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