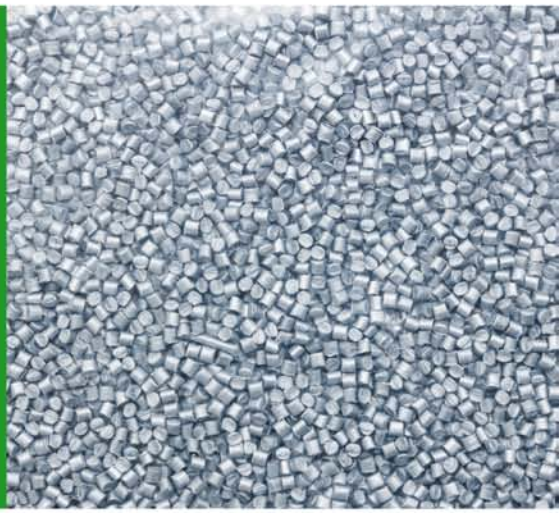
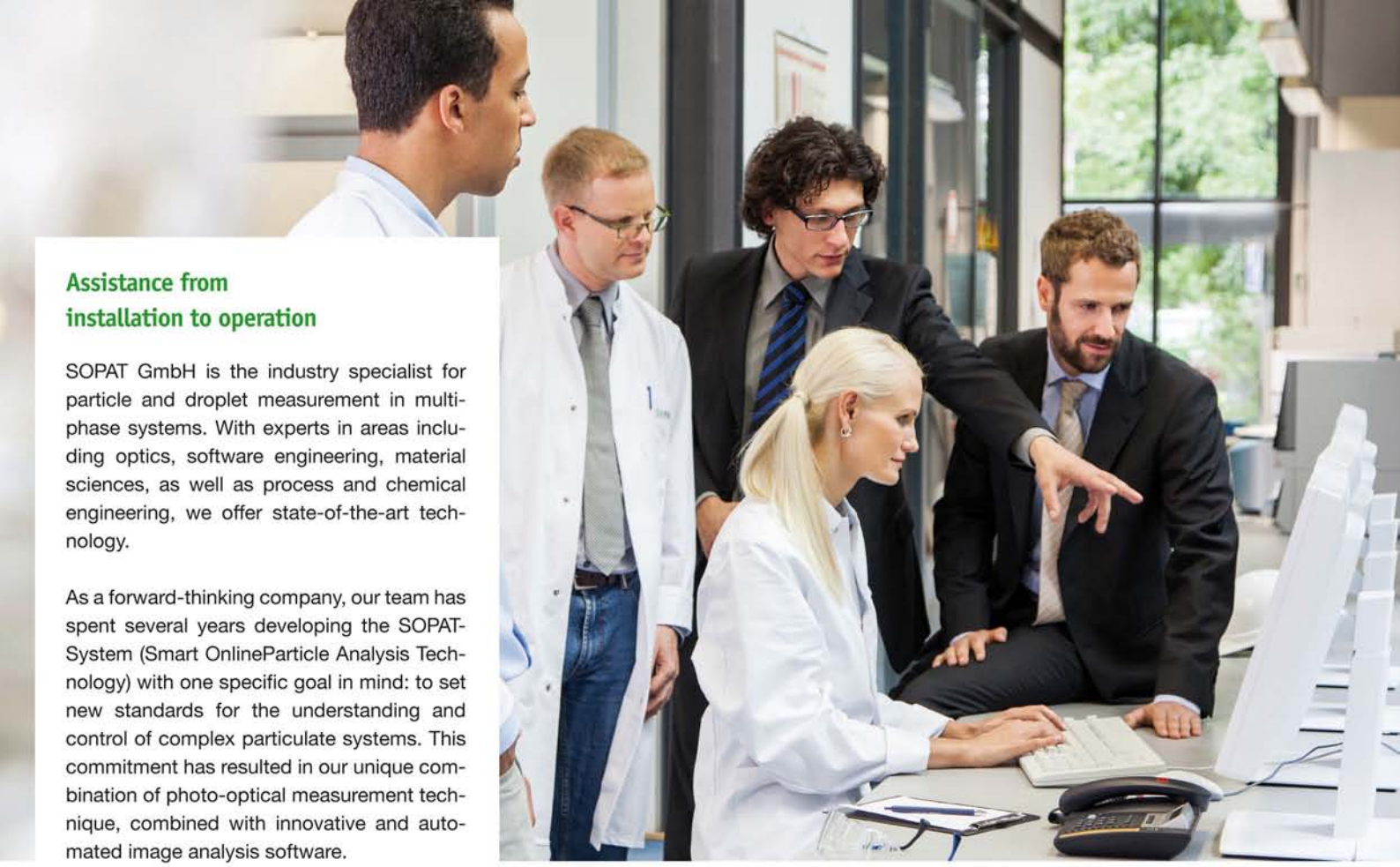
SOPAT
Smart Online Particle Analysis Technology

Particle characterization in polymerization processes



Guaranteed Particle Size through Instantaneous Feedback

Real-time particle size analysis during polymerization processes is possible with the powerful technology by SOPAT. Bring process monitoring to a higher, further refined level and optimize system throughput with more information about your process, such as particle size and shape distribution. Being well informed about your chemical system significantly reduces downtime and losses, and also improves product quality, further benefiting both you and your customers.



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.

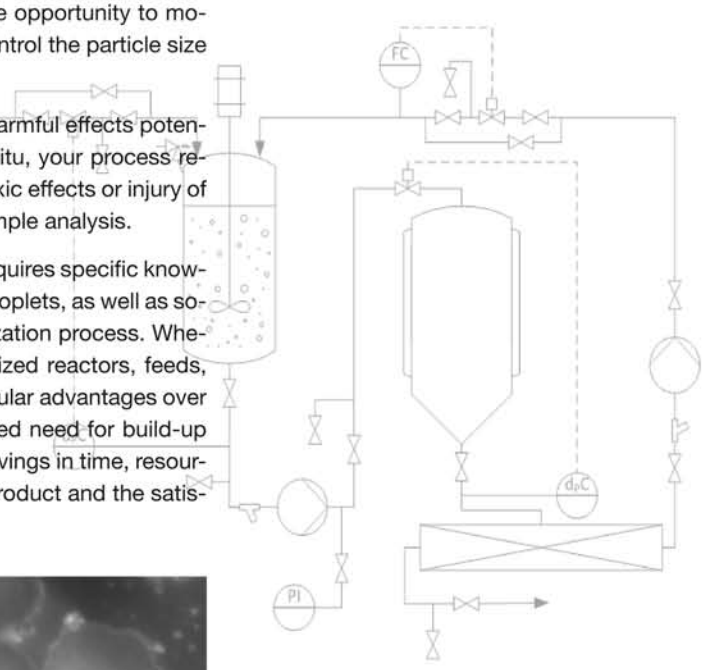
Installation of the SOPAT-VR for the determination of the size of dodecene droplets in H_2O from a mini-plant. >

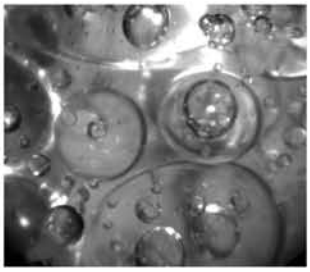
Streamline your polymerization process to the utmost precision

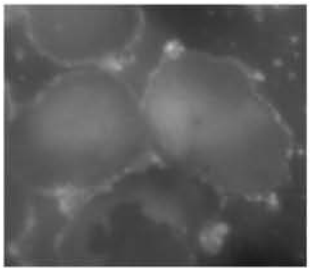
Particular challenges in polymerization processes today include the need for readily-available information to control the rapid rate of drop breakage, coalescence, particle formation and growth. SOPAT's state-of-the-art measurement technology offers you the opportunity to monitor your process in real time. Using this data, it becomes possible to control the particle size and the width of its distribution present within your process.

The application of SOPAT's analysis system also reduces the chance of harmful effects potentially imposed by sample extraction. As our system runs completely in-situ, your process remains completely self-contained, significantly reducing the potential of toxic effects or injury of your employees. This also reduces down-time and possible delays in sample analysis.

A full understanding of the extent to which polymerization has occurred requires specific knowledge about the size distribution and shape of the suspended monomer droplets, as well as solid particles created by conversion of these droplets during the polymerization process. Whether this is taking place in small-scale laboratories or within industrial-sized reactors, feeds, piping or various other types of equipment, the SOPAT probe offers particular advantages over other monitoring techniques due to the reduction in fouling and a reduced need for build-up removal. The monitoring and controlling of the size distribution creates savings in time, resources and money. Furthermore, SOPAT helps to ensure the purity of your product and the satisfaction of your customers.







< Styrene droplets in water at the beginning of polymerization, Polystyrene resin particles in a fluidized bed, Polyvinyl chloride particles from a pilot plant after reaction in a stirred-tank.

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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 relability**

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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