



# Focusing on Particle Size

USING LASER  
DIFFRACTION  
TECHNOLOGY

# OMEC Instruments

WHAT YOU SEE IS WHAT YOU GET

OMEC was founded in 1993 in Zhuhai, China. We are known for producing robust systems and have a reputation for innovation and development expertise, especially in laser diffraction particle sizing. As a result, OMEC is one of the leading particle sizing companies in China and has a rapidly growing customer base elsewhere. In 2010, OMEC became part of the Malvern Panalytical family. It is a relationship that has enabled further product development and strengthened OMEC as a global provider.

Our transparent and simplified approach give users access to the most modern particle sizing technology without the high cost of ownership that is so often a barrier to its adoption. Simple self-installation and ongoing expert support that is delivered online make our systems an easy and convenient choice for laboratories anywhere in the world.

2



# Particle Size matters

## FOCUSING ON PARTICLE SIZE

Particle size influences numerous properties such as reactivity, dissolution rate, suspension stability, appearance, flowability and handling, packing density and porosity.

Modern instrumentation makes particle size measurement straightforward, enabling better control of product quality and greater understanding of ingredients, processes and outputs. One of the most extensively used particle sizing techniques is laser diffraction, a long-established, robust and universally recognized method around which many standards have been developed.

4



5



# Why Laser Diffraction?

## YOUR ADVANTAGE

- Laser diffraction is one of the most established and widely used particle characterization techniques – reliable, simple to use, able to generate data in a relevant form.
- It is a non-destructive technique that can be used to measure particle size for materials ranging from hundreds of nanometers up to several millimeters.
- It has proved successful across many different industries and applications because of its:
  - Wide measurement range - from submicron to the millimeter sizes.
  - Rapid measurements - results generated in less than a minute.
  - Repeatability - large numbers of particles are sampled in each measurement.
- Instant feedback - monitor and control the particle dispersion process.
- High sample throughput - hundreds of measurements per day.
- Calibration not necessary - easily verified using standard reference materials.
- Well-established technique - covered by ISO 13320 (2009).

Technological advances in recent years have brought systems such as the Toppersizer that are cost-effective, simple to install and extremely easy to use, making laser diffraction particle sizing even more accessible for many applications.

6



7

# What can Laser Diffraction do for you?

## FOCUSING ON PARTICLE SIZE

### Effective R&D support

During R&D and product development, many different types of characterization tools may be used.

- With laser diffraction you don't have to be a specialist in the measurement technique to get good, relevant results.
- The flexibility of laser diffraction makes it applicable to a wide range of materials and multiple projects.
- Rapid results allow faster feedback for accelerated product and process development.

### Improved raw materials management

Ensuring that incoming raw materials and intermediates are of the required specification is critical to the success of any process.

- Tight control of specifications helps avoid problems further down the line.
- Understanding the particle size distribution tolerances for your process enables clear specification setting for particulate raw materials.
- Rapid particle size measurement means fast, reliable QC of incoming raw materials and the ability to quickly reject batches that fail to conform.

This fosters the ability to trust the raw materials to produce quality product with less rework

### Better process control

Once specifications have been set, maintaining control over your process is key.

- Using laser diffraction to routinely monitor particle size distributions at critical points delivers rapid feedback so that timely adjustments can be made to keep the process in control.
- Better process control means more efficient use of plant, materials, energy and human resources and leads to better quality, more consistent output with less waste.

### Efficient end-product QC

Routine quality control demands reliable, accurate processing of multiple samples and sample types, at speed, to enable timely product release or to green light the next stage of manufacturing. Often many different parameters must be assessed using a variety of analytical systems, so ease, convenience and flexibility are high on the agenda.

- Easy to use particle sizing technology that can be used by operators at every level and which delivers meaningful, easy to interpret results helps accelerate product release or troubleshooting.
- The versatility of laser diffraction allows for rapid change between sample types, aiding all-important throughput and efficiency in a busy QC department.

8



9

# Our Customers

## THE INDUSTRIES WE SERVE

Our users range from experienced analysts to those who are new to particle sizing. They may work in companies where laser diffraction is an established characterization tool or in organizations that are upgrading from more labour-intensive techniques, such as sieving. Whatever the situation, our affordable particle sizing solutions help to enable more controlled and efficient high quality output from every process.

### Building materials

Calcium carbonate

Powder coatings, paints and pigments

Battery materials

Ceramics

Powder metallurgy

Mining and Minerals

Academia



# OMEC's Topsizer

YOUR COMPETITIVE EDGE

Topsizer – modern laser diffraction technology in an affordable, easy-to-use instrument.

Topsizer instruments offer cost-effective access to modern laser diffraction particle sizing technology. These robust systems deliver the reliable, high quality particle size information that businesses need to ensure the efficient performance of multiple industrial processes and products.

OMEC's efficient business model means we keep instrument purchase and ownership costs low,

overcoming one of the major barriers for many who wish to upgrade to laser diffraction particle sizing. Within this, our commitment to excellence in sales, service and support is absolute. We aim to be responsive, achieve a rapid turnaround and make it easy for you to do business with us. Via our global portal, every user has access to the accumulated expertise of both OMEC and our parent company Malvern Panalytical, as well as to local support. This means that wherever you are in the world, you can quickly tap into an extensive network of technical, applications and industry knowledge and support.



# Your competitive edge

As part of the Malvern Panalytical family, OMEC's own significant experience and expertise in particle sizing continues to gain further strength and support. Our TopSizer laser diffraction systems were co-developed with teams at Malvern Panalytical, within their internationally-recognized quality management system. Together we also contribute to the continued development of international standards in laser diffraction particle sizing.

OMEC particle sizing systems are used across a wide range of industrial sectors and in academia. Our laser diffraction particle size analyzers offer straightforward solutions in areas such as: building materials; calcium carbonate; powder coatings, paints and pigments; ceramics; powder metallurgy; battery materials; mining and minerals; and specific pharmaceutical ingredients applications.

Our products give users access to the most modern particle sizing technology without the high cost of ownership that is so often a barrier to its adoption. Simple self-installation and ongoing expert support that is delivered online make our systems an easy and convenient choice for laboratories anywhere in the world.

We know that customers rely on our instruments in order to ensure the quality of their own processes and products. OMEC's commitment, quality and integrity are reflected through the company's internationally recognized ISO 9001:2015 Quality Management Certification

OMEC Instruments  
Zhuhai, China

[WWW.OMECINSTRUMENTS.COM](http://WWW.OMECINSTRUMENTS.COM)

OMEC, A MALVERN PANALYTICAL BRAND

## Service and Support

We aim to be responsive, achieve a rapid turnaround and make it easy for you to do business with us.

At OMEC we want you to have particle size measurement available whenever you need it. We are here to help you with quality answers and short turnaround times.

### Online Helpdesk

To achieve a very high level of service, we rely on our helpdesk portal, accessible via our website, allowing us to direct your request to the most appropriate OMEC team member anywhere in the world. Managed by experienced specialists, we ensure a quick turn around time for any question or request.

### FAQ

Using our FAQ database, you can take advantage of our years of experience serving customers like you

