

Nanoparticle Detection & Analysis

Our instruments, supporting *your* nanotechnology risk management

At SAFENANO, we have a range of portable instrumentation and trained staff to help you identify and understand the potential for nanoparticle exposures in your workplace, including:

Condensation Particle Counters

Our hand-held Condensation Particle Counters (CPC) provides **real-time high-sensitivity detection of particles from 10 nm to >1 µm** over a concentration range of 1 to 100,000 particles / cm³, at a rate as fast as 1 measurement per second **for rapidly changing situations**.



Fast Mobility Particle Sizer

Our Fast Mobility Particle Sizer (FMPS™) spectrometer measures particles in the range from 5.6 to 560 nm, offering a total of 32 channels of resolution (16 channels per decade), producing **particle-size-distribution measurements with one-second resolution**, providing the ability to visualise particle events and changes in particle size distribution in real time.



Nanoparticle Spectrometer

Our portable scanning nanoparticle spectrometer (Naneum NPS500) measures the **size distribution and surface area** of aerosol particles over a range of 5 nm to 500 nm over 128 user-defined channels without the use of a traditional low-level radioactive source.



Aerodynamic Particle Sizer

Our Aerodynamic Particle Sizer (APS) spectrometer provides high-resolution, **real-time aerodynamic size measurements of particles** from 0.5 to 20 µm. Aerodynamic diameter is the most significant aerosol size parameter because it determines the particle's behaviour while airborne. Knowledge of a particle's aerodynamic diameter allows you to determine if and where the particle will be deposited in the human respiratory tract and how long the particle will remain airborne in the atmosphere or in an aerosol.



Nanoparticle Surface Area Monitor

Our portable Nanoparticle Surface Area Monitor provides real-time high-sensitivity measurements of the **human lung-deposited surface area of particles** (reported as $\mu\text{m}^2 / \text{cm}^3$) over a size range from 10 to 1000 nm and a concentration range of 0 to 10,000 $\mu\text{m}^2 / \text{cm}^3$ at a rate as fast as 1 measurement per second for rapidly changing situations.



DustTrak Personal Aerosol Monitors

Our DUSTTRAK Aerosol Monitors provide real-time **aerosol mass concentration** simultaneously for PM1, PM2.5, Respirable, PM10 and Total particulate.



Particle Aerosolisation

Our PA100 Powder Aerosoliser uses vibrating jets to create high velocity air streams to aerosolise particles from a powder sample.



Particle Sampling

We conduct **particle sampling for gravimetric and/or chemical analysis** in a variety of ways, from size-selective static sampling to personal sampling to surface wiping and grab sampling. Our Nano-ID Select instrument is a wide-range sampler and is unique in that it spans the entire aerosol range from 2 nm to 20 μm , providing 12 size-segregated samples for microscopy and chemical analysis.



The patented IOM Sampler traps particles up to 100 μm in aerodynamic diameter and closely simulates the manner in which airborne workplace particles are inhaled through the nose and mouth.

In addition, we have a range of off-line measurement and characterisation systems including:

- Dynamic light scattering instruments for particle size, zeta-potential and molecular weight analysis (Nanosight LM20, Zetasizer Nano ZS);
- SEM-EDXA for particle and fibre imaging with spatially-resolved elemental analysis;
- ICP-OES for multi-element trace analysis;
- Gravimetric and chemical analysis techniques;
- Access to other specialist characterisation instrumentation (e.g. TEM, FT-IR, XPS, SIMS, Raman).

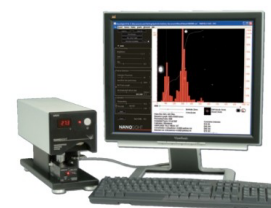


Image sources:
TSI, SKC Inc, Nanosight, PMS

Using these instruments, we can provide rapid, state-of-the-art information on possible particle releases from your materials and processes, so that you can safely and effectively control and prevent exposure to your workers and the environment.

Who to Contact ...

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