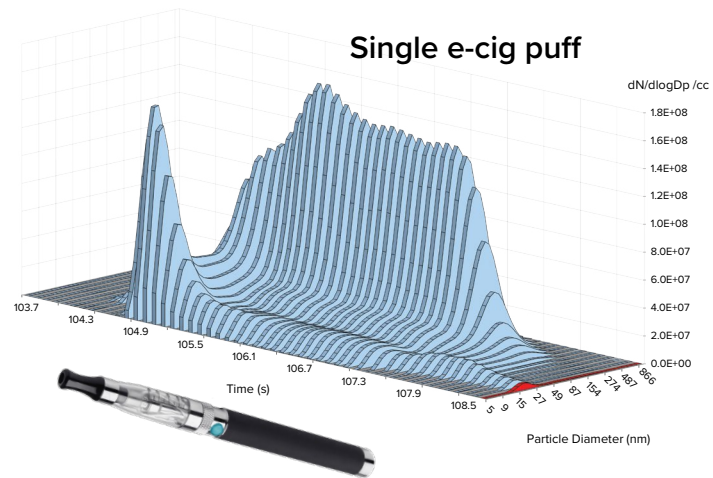
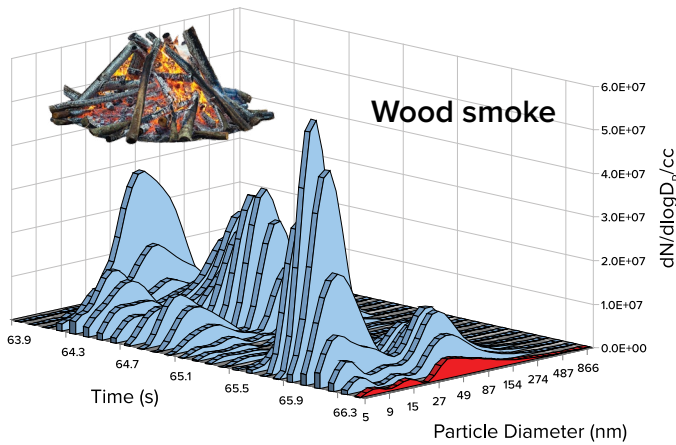
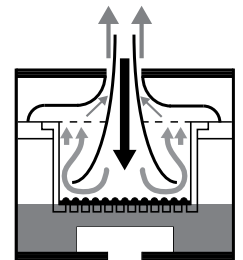
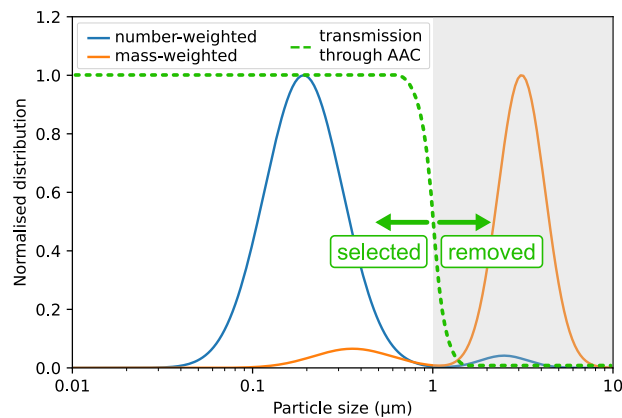


## 10Hz aerosol size distributions: 5nm – 2.5µm



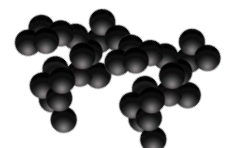
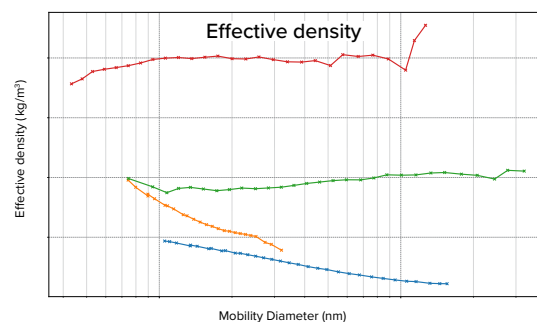
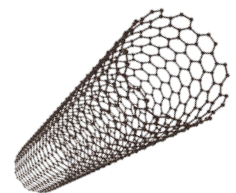
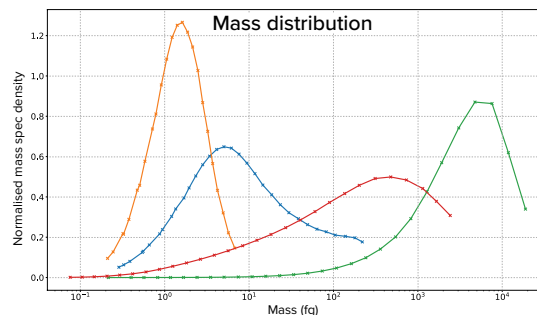
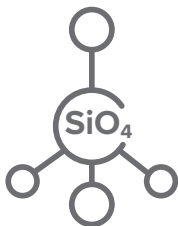
## Size select aerosols for in-vitro exposure

...from a few nanometres up to several microns



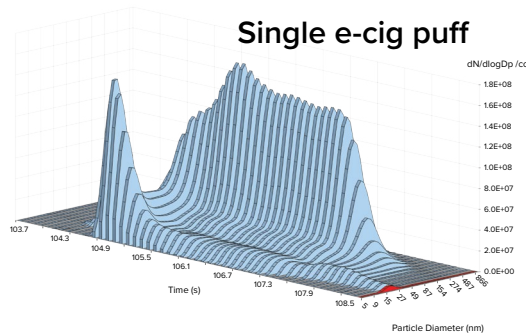
## Characterise aerosols, powders & nanomaterials

...from a few nanometres up to several microns



## Real-time aerosol size distributions

Cambustion's DMS500 measures size distributions between 5nm and 2.5µm at up to 10Hz. The DMS combines the sensitivity to measure ambient size distributions with the dynamic range to measure from high concentration, time-varying sources such as e-cigarettes, combustion, cooking, industrial processes and more.



Traceable calibrations ensure accurate characterisation of aerosols, while the 10Hz measurements capture even short term variations in particle size and number.

## Size select particles for in-vitro exposure

In-vitro exposure of cells to aerosols is a well established technique for toxicity studies. Mass remains a key dosimetry metric, while tending to be dominated by larger particles. These larger particles may not penetrate to lung cells in-vivo, since preferential deposition occurs in the upper respiratory tract and deep lung.

The Cambustion AAC offers researchers several opportunities to enhance in-vitro studies, with its ability to size select particles according to their aerodynamic diameter, within the size range 25nm – 5µm.

The AAC operates at room temperature and pressure; unlike with impactors there is no need to run the test chamber at low pressure, thus avoiding consequent effects on the cells under test.

## Size selected exposure

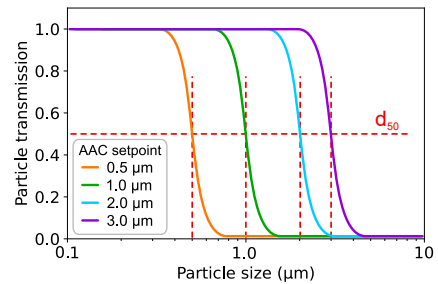
From a challenge aerosol the AAC can select particles *within* a narrow specified range of aerodynamic diameters for exposure work. This enables direct investigation of possible variation of toxicity vs particle size.

**Cambustion** is an independent, privately owned company with headquarters in Cambridge, UK and customers in more than 35 countries worldwide

Cambustion continue to research & develop novel instrumentation, and now also offer Measurement Consultancy; helping our global clients to solve a wide range of particle and gas measurement issues.

## Large particle removal

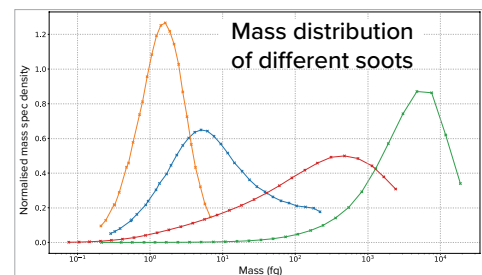
Alternatively the AAC may remove particles *larger* than a user specified size from a challenge aerosol.



This allows exposure tests to be run *only* with particles small enough that they would reach the alveoli, rather than be lost in the upper respiratory tract.

## Aerosol & powder characterisation

Engineered and natural aerosol materials can have complex characteristics, with non-spherical particles of varying effective density are difficult to model without good experimental data. Accurate characterisation of the properties of these particles is an essential first step to understanding their properties.



The Cambustion M2AS represents a novel enhancement on previous technology, able to *measure* (rather than assume) mass vs size distributions, effective density and more for non-spherical particles.

Already applied to particles in the 30nm – 3µm range, further M2AS developments are ongoing.

## Instrument sales, rental & consultancy

We offer sales and rental of our measurement products, and support users with our application and aerosol science knowledge and experience. We also offer Measurement Consultancy; bringing our experience and a wider range of measurement tools and expertise to meet your challenges.



To learn more, visit:  
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