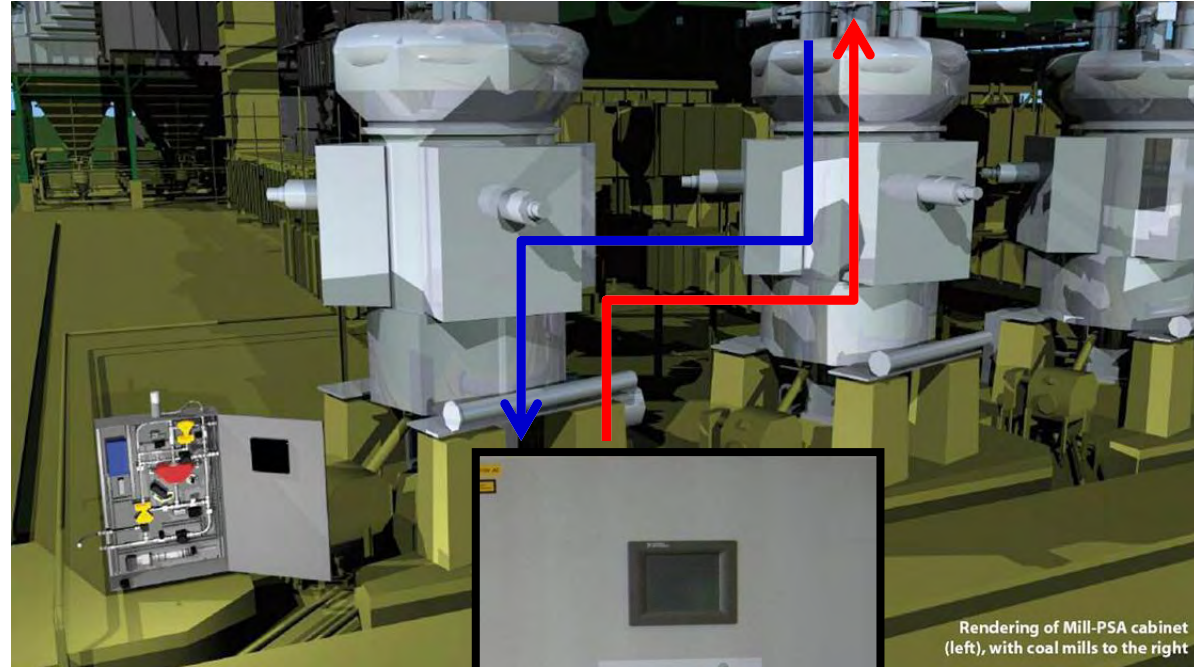


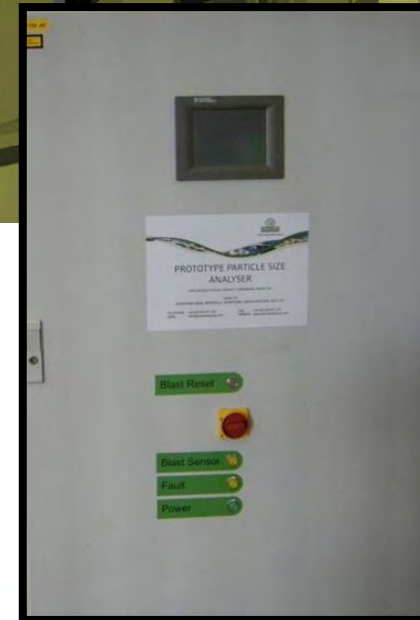
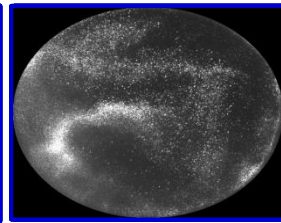
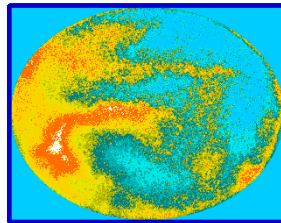
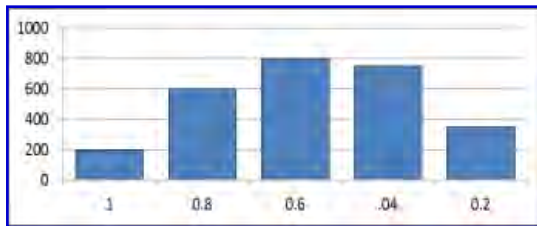
Particle Size Analyser

What does it do?

- Reliable on-line measurement for PF particle size.
- Extractive system using leading edge illumination visualisation.
- Self cleaning to prevent blockages and maintenance issues.
- Outputs size categories in histogram or bin format.



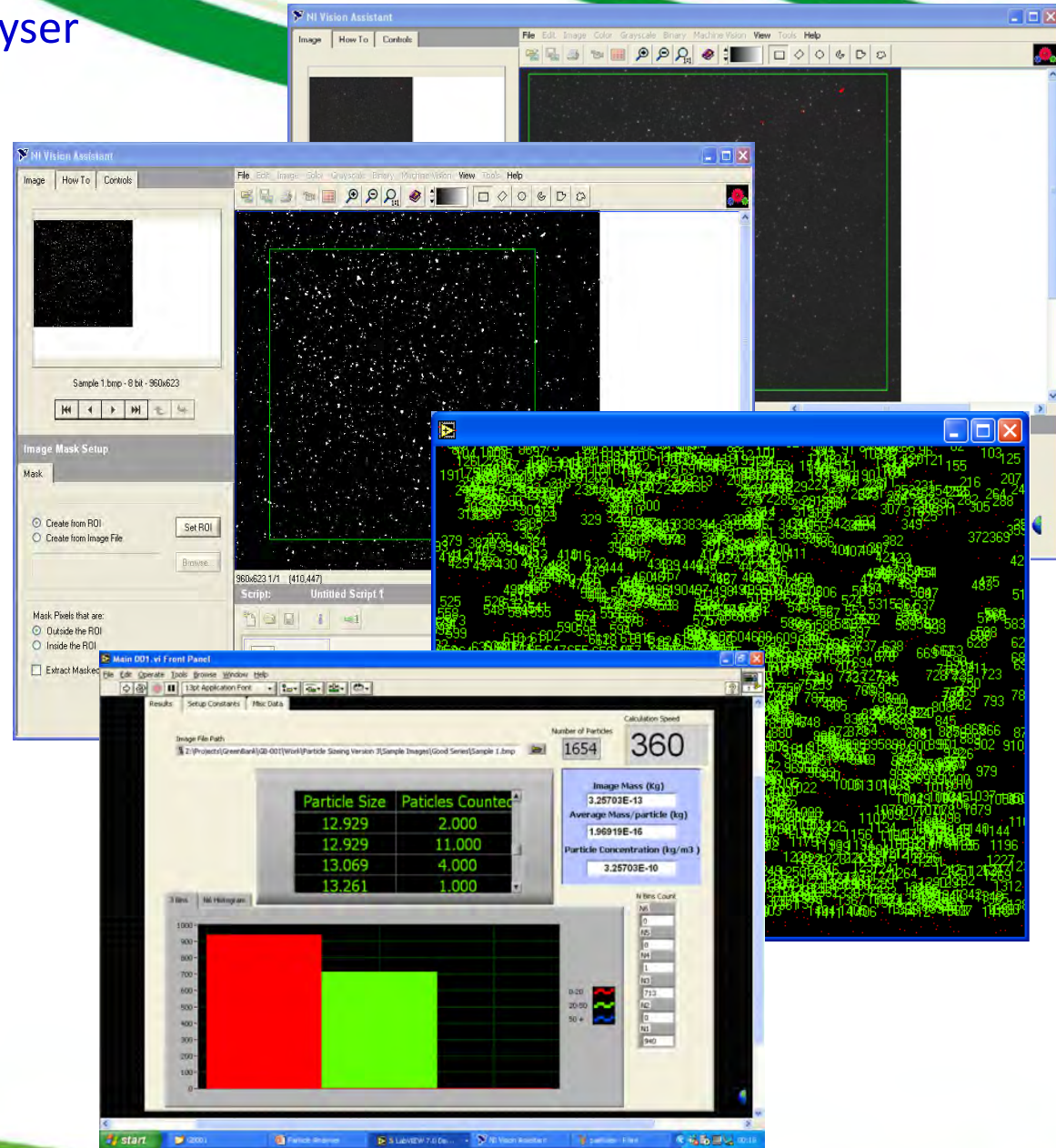
Rendering of Mill-PSA cabinet (left), with coal mills to the right



MillMaster® Particle Size Analyser

How does it work?

- Rapid high speed digital images are taken of particles in flight.
- The images are digitally focused and sharpened.
- The particles clusters are sized and counted.
- The output provides size and number of particle clusters which are calibrated to lab samples.
- The system trends averages periods of over time.
- System air-purges to clean.



PSA Methods

Particle size techniques

Intrusive

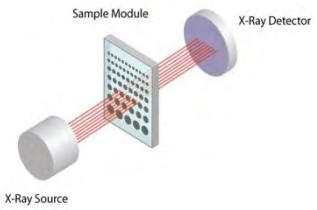
Optical microscope



Sieving

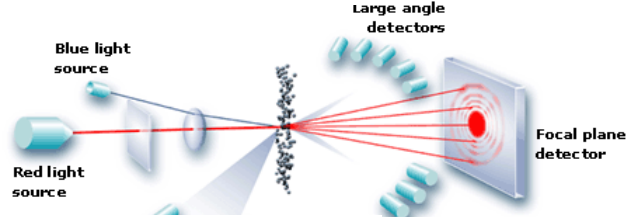


Sedimentation

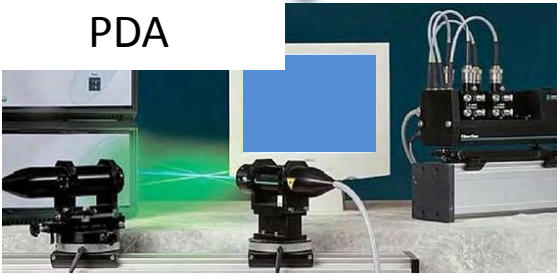


Non-imaging

Laser diffraction



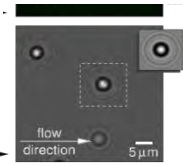
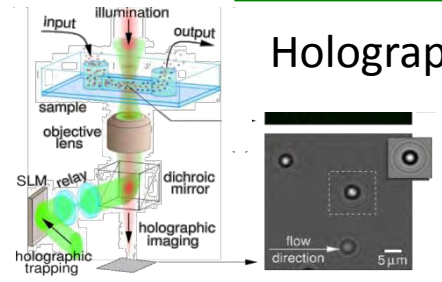
PDA



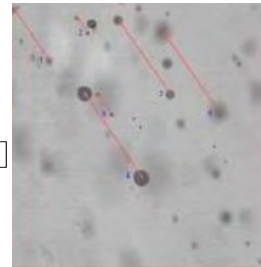
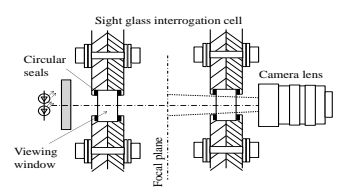
Non-Intrusive

Imaging

Holography



Photography



Physical Sample removed for offline testing.

Delicate and expensive lab based equipment.

Greenbank current PSA technology

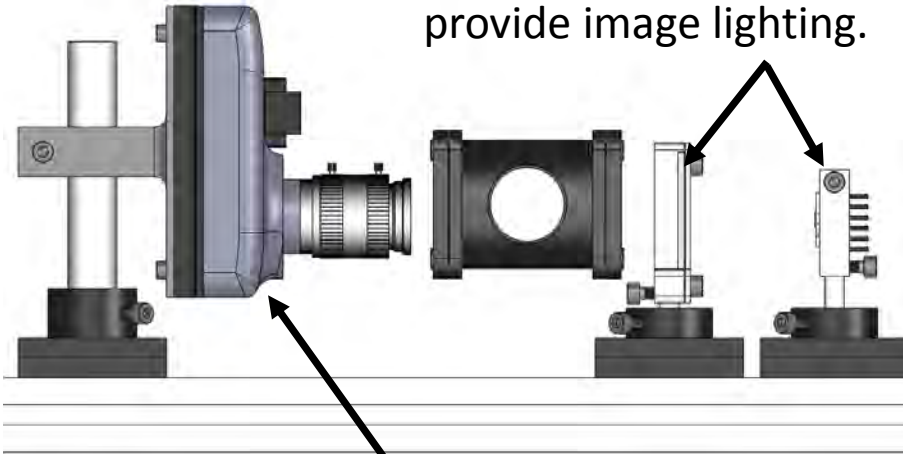
PSA Benefits

What is photographic particle sizing good for?

- Measure particle or droplet size in **real time**.
- Measure **individual** particles singularly or from a cluster.
- Make **non-intrusive** measurements.
- Make **in-situ** measurements.
- Measure the **true** particle size.
- Close to instantaneous reporting frequency.
- **Safe** to use in industrial applications.
- Gives laboratory style **accuracy** within the field.

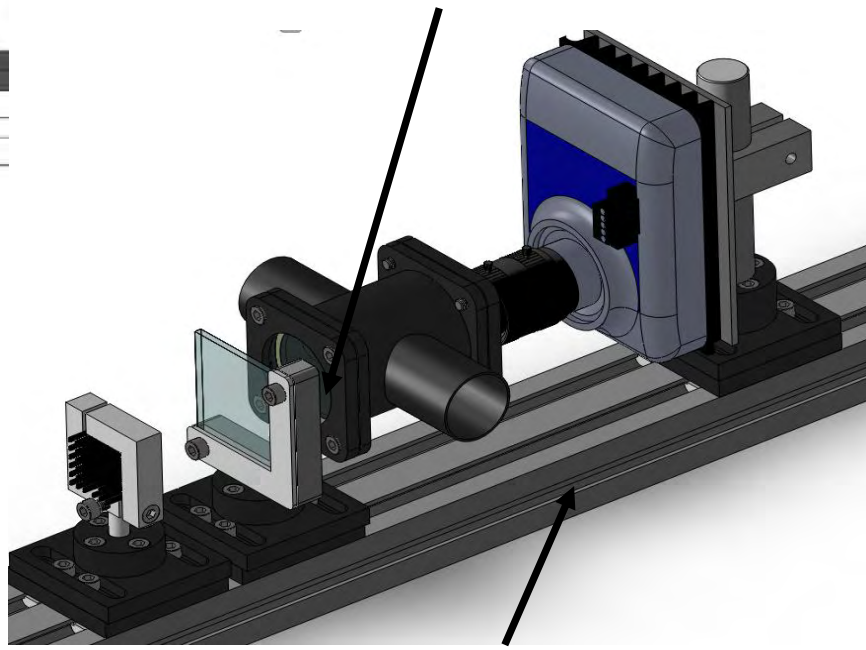
GAIM Technology

Illumination and diffusive optics to provide image lighting.



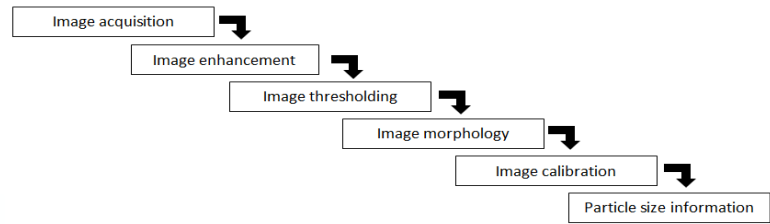
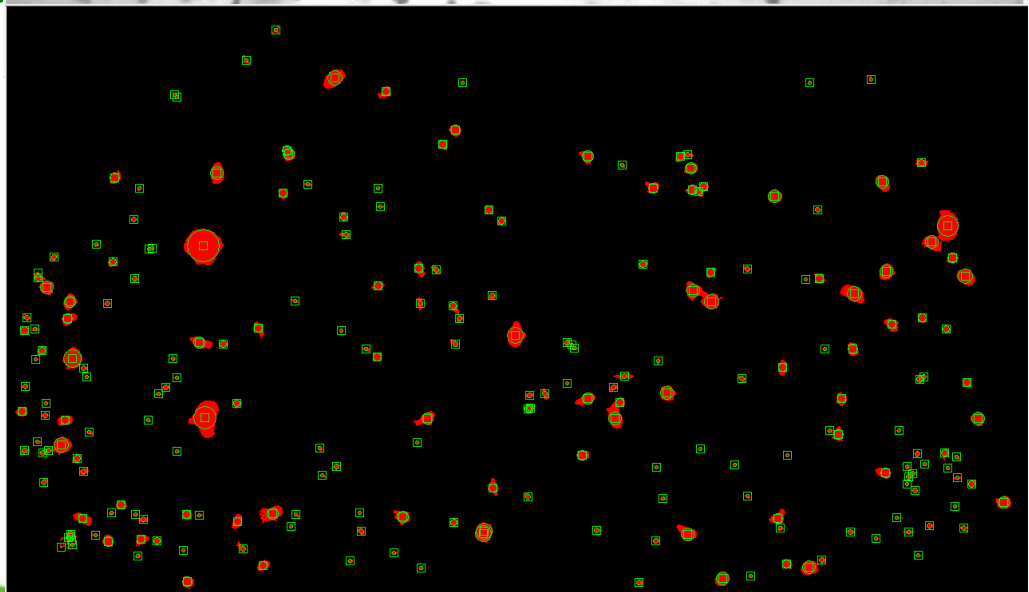
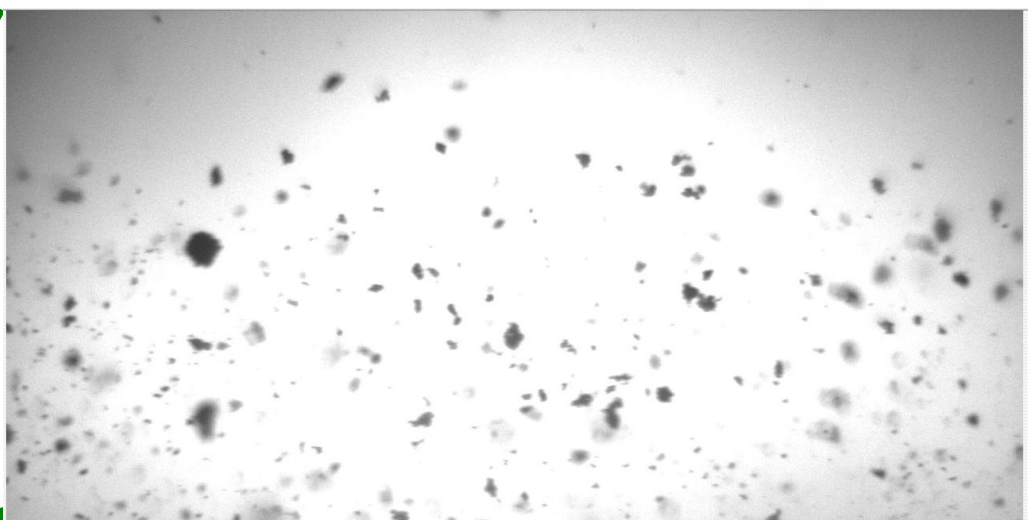
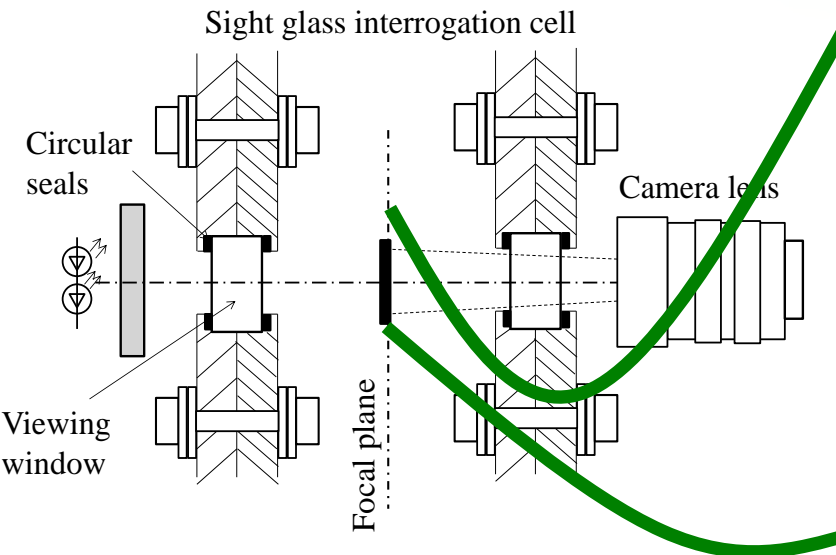
High resolution CCD digital camera with triggerable output and on-board processing CPU.

Interrogation area capable of high pressures

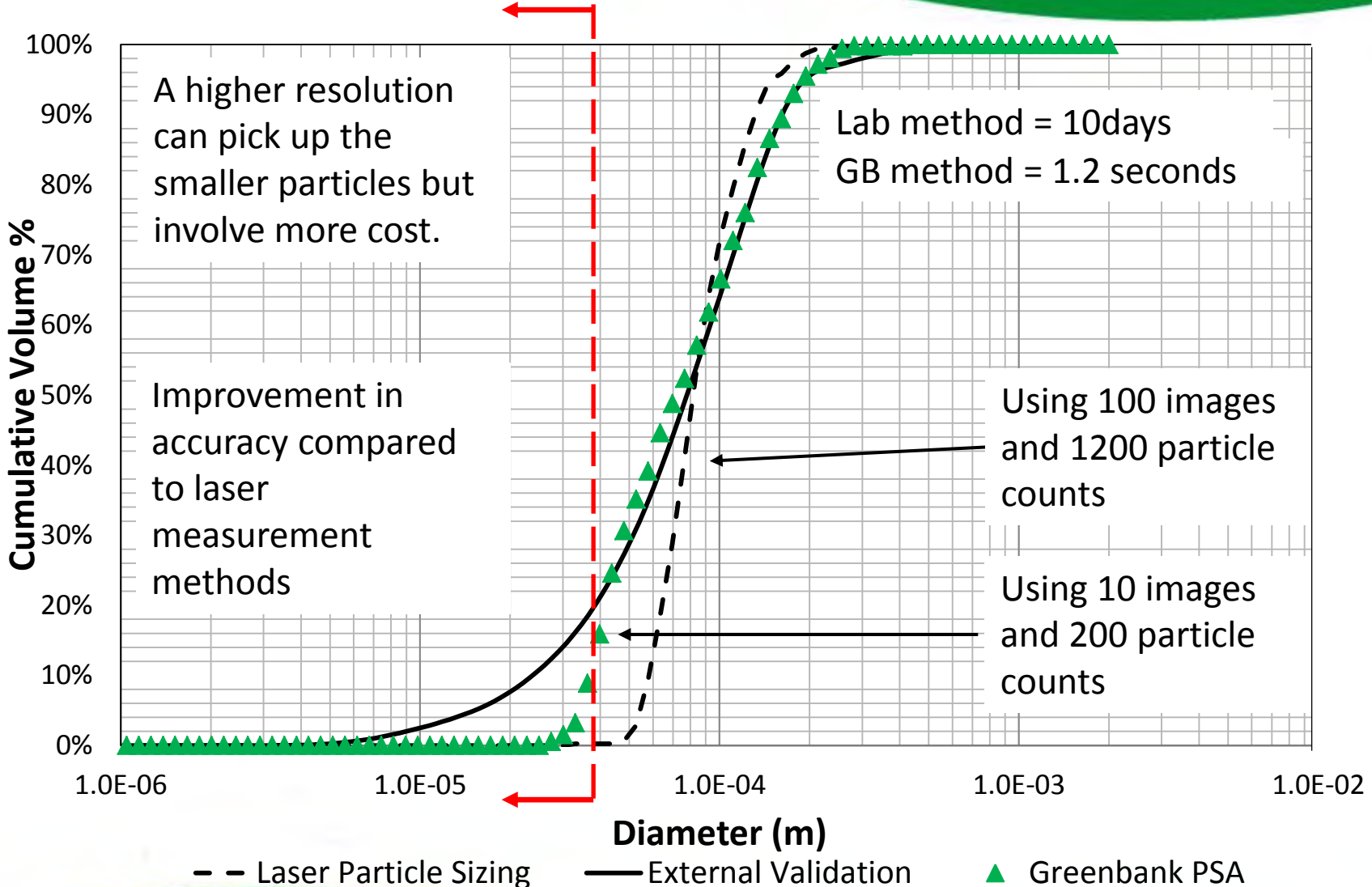


Millimetre accuracy mounting system, for laboratory style setup accuracy.

GAIM Technology

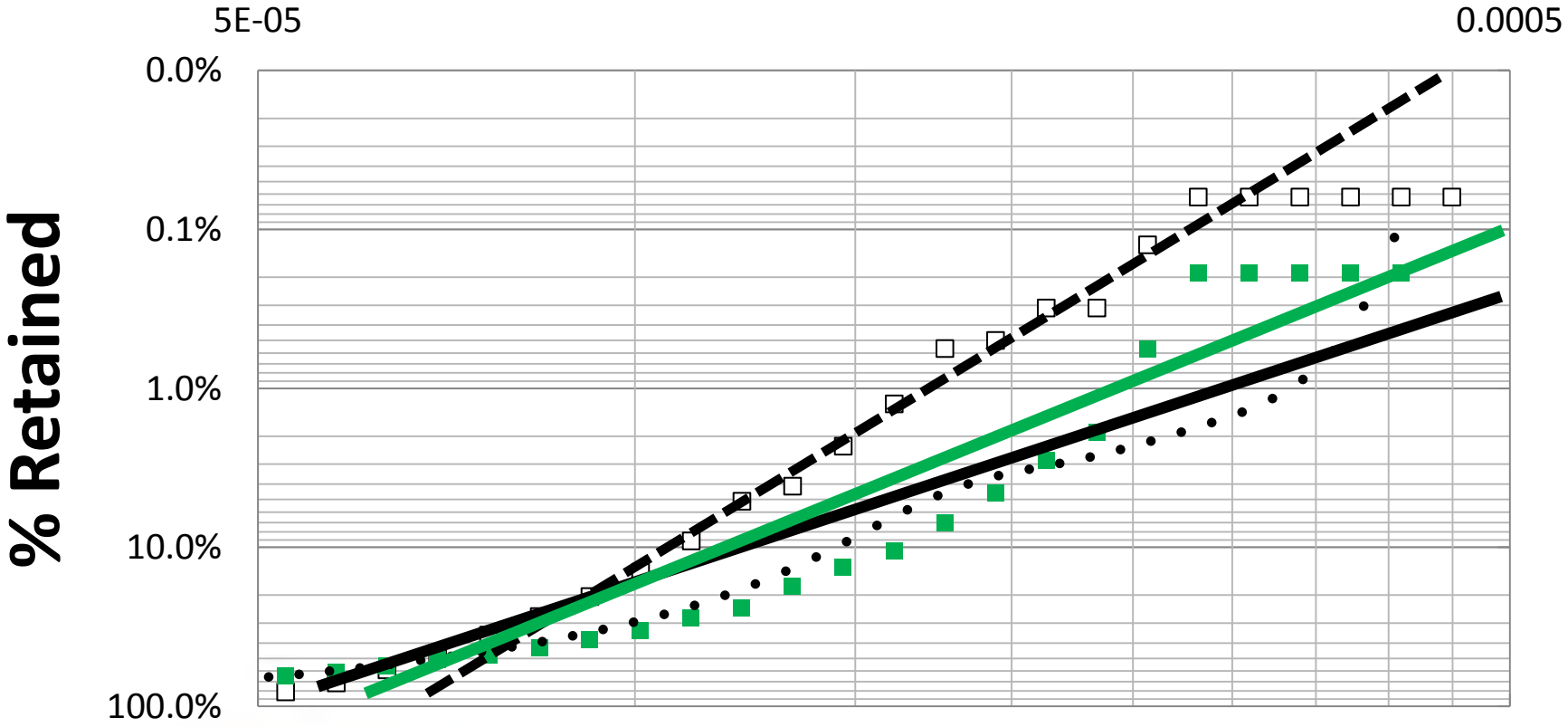


GAIM Technology



GAIM Technology

Particle Diameter (m)



□ Laser Sizing method ■ Greenbank Technology • External Laboratory Sampling