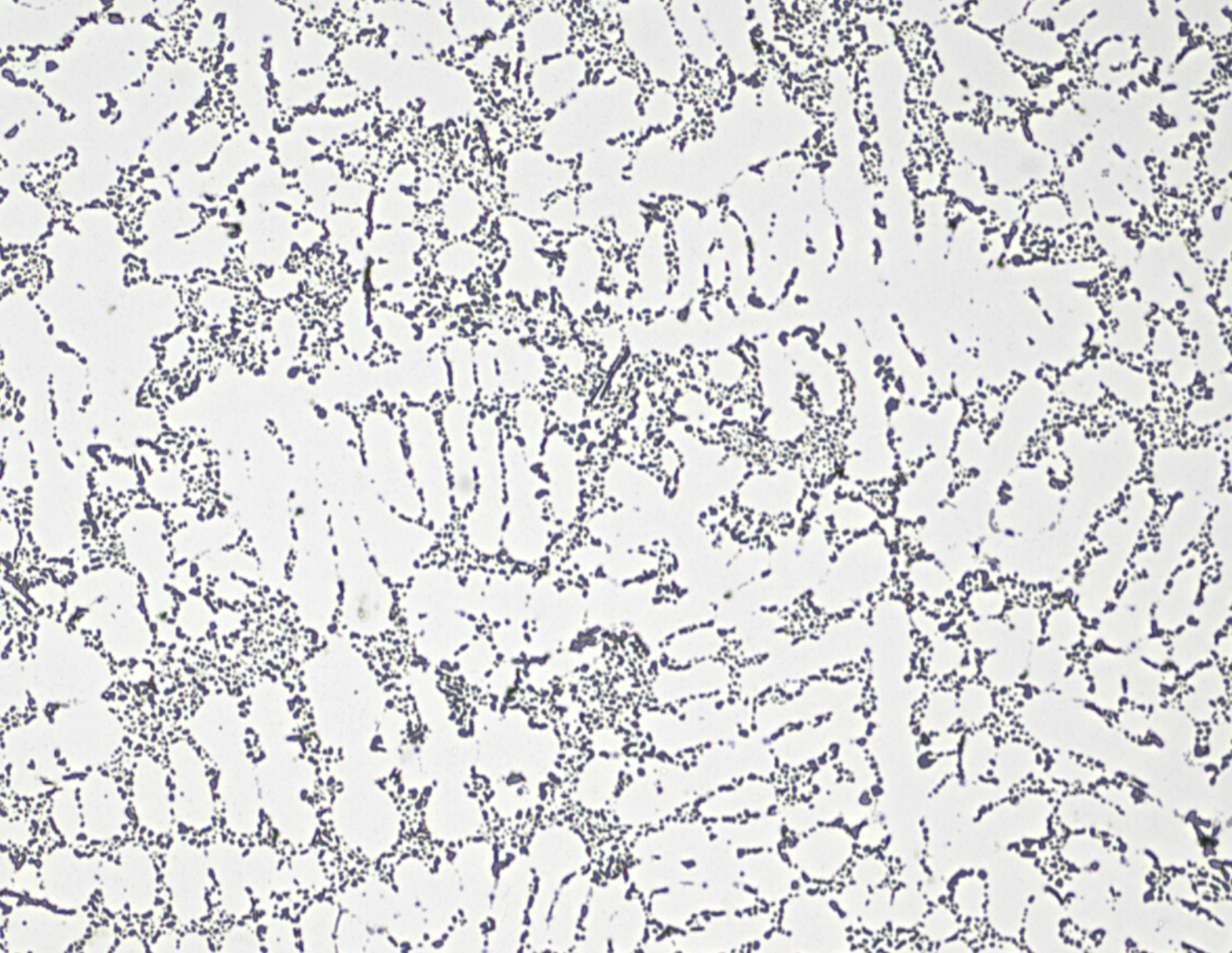


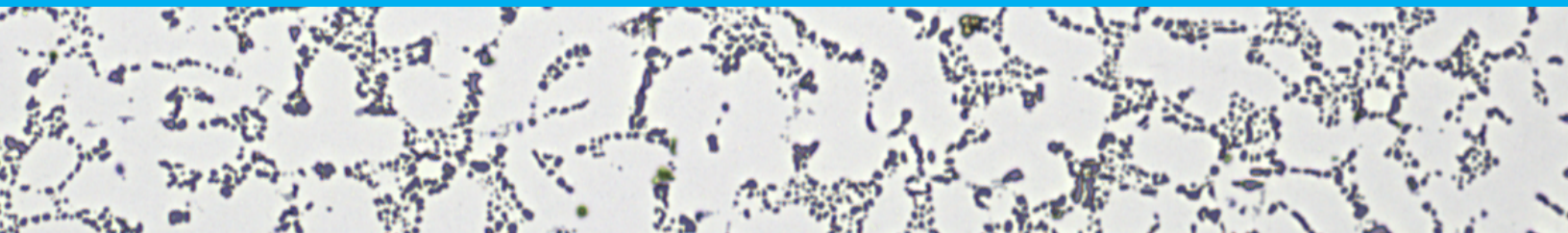


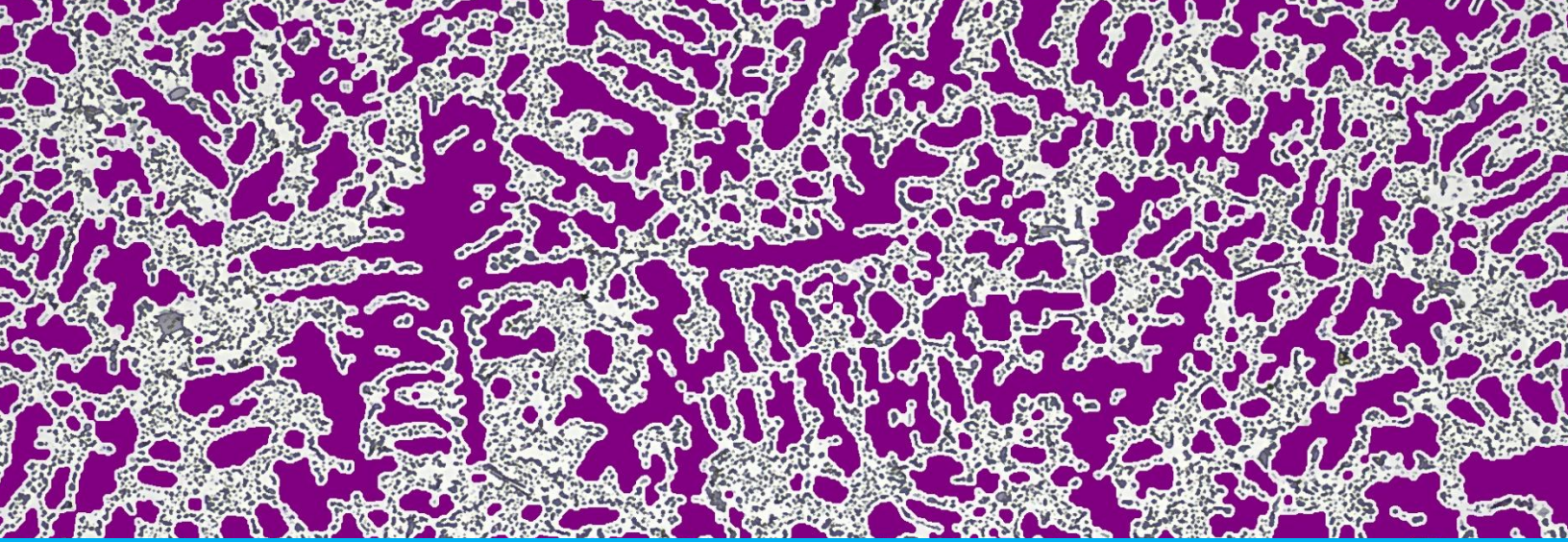
## Dendrite Arm Spacing Measurement in Cast Metallic Alloys

Accurate and repeatable **DAS** measurement techniques for alloy microstructures using image analysis. Read about the new automated method of measuring microstructural fineness available in **Clemex Vision**.



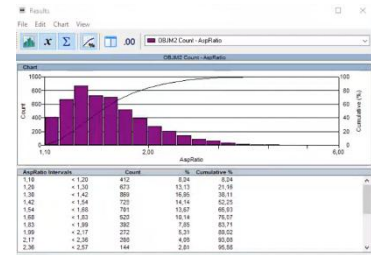
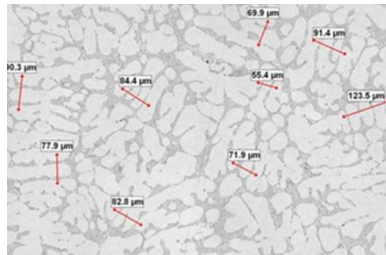
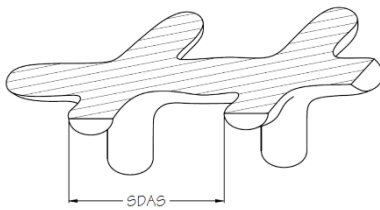
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## Image Analysis Methods for Dendritic Arm Spacing

### SDAS: MANUAL METHOD FOR MEASURING MICROSTRUCTURAL FINENESS

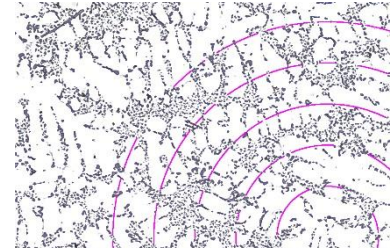
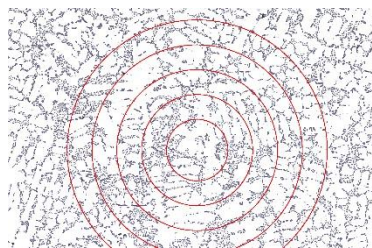
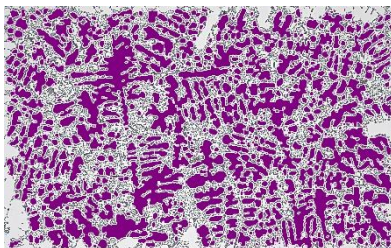


Fineness in hypoeutectic metallic alloys, like hypoeutectic Al-Si based casting alloys, has traditionally been quantified by measuring the spacing between secondary dendrite arms (SDAS).

The manual SDAS method using a Clemex system involves capturing images from a sample and annotating a number of secondary dendrite arms with direct measurement tools.

The length distribution of these manual measurements is updated instantaneously in the results panel of the software and can be exported for further processing using a Linear Intercept Method macro to obtain DAS.

### MLDS: AUTOMATED METHOD FOR MEASURING MICROSTRUCTURAL FINENESS



MLDS is an approach based on an image analysis routine which automatically detects dendrites, superimposes a set of concentric circles and exports measurements of overlapped features.

Circles are superimposed and measured in a way that is universal for all microscope magnification and camera combinations. The use of a single routine for different situations further minimizes operator errors.

The automated Mean Linear Dendrite Spacing (MLDS) method is equivalent to DAS. It has been proved to be 16 times faster and less prone to operator subjectivity than the above manual method.