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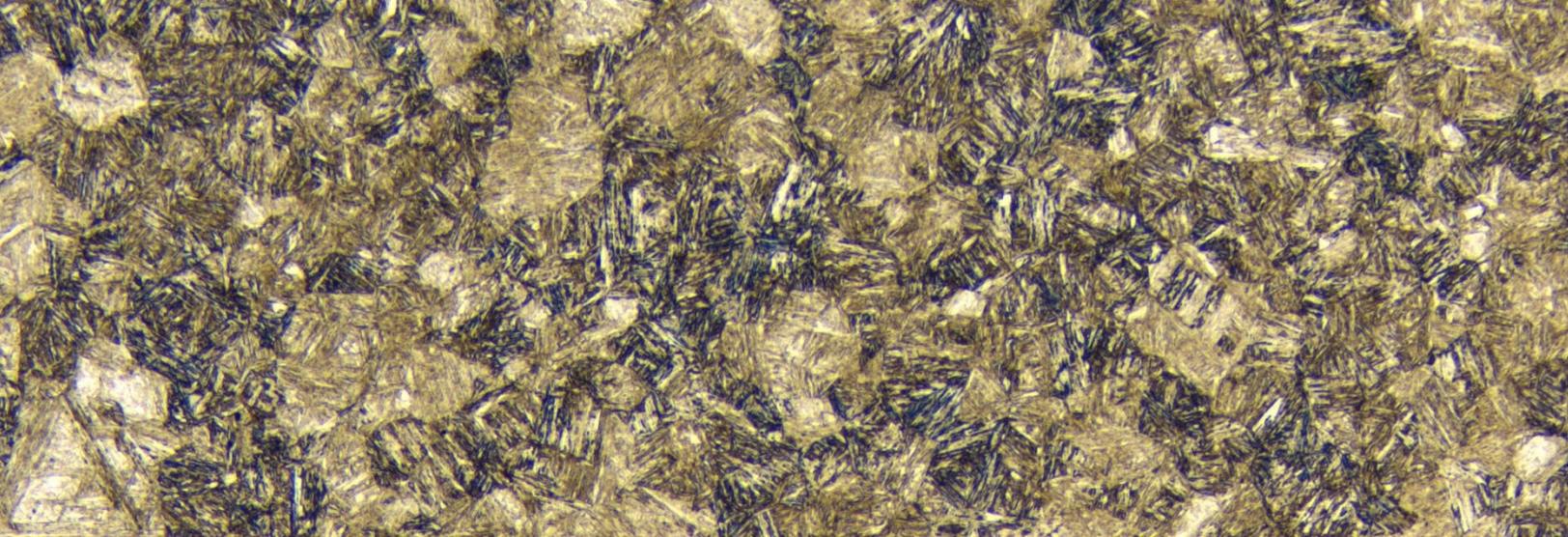
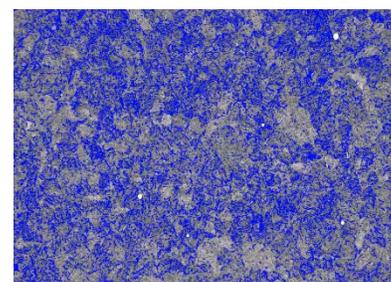
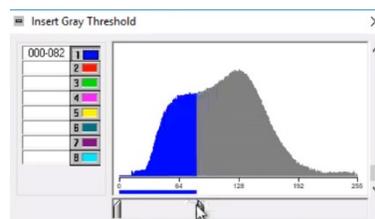


Image Analysis for Martensitic Microstructures

A CHALLENGING APPLICATION FOR GRAY LEVEL THRESHOLDING

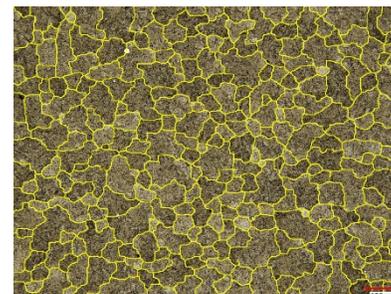
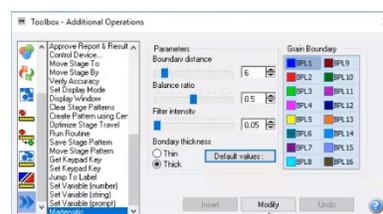


Martensitic microstructures are difficult to analyze optically because of the materials' resistance to etching techniques. Grain structures are barely visible and typically a lab will rely on the human eye to distinguish and classify them.

The gray thresholding technique used in image analysis software is not appropriate for this kind of image, as it is based on the gray level distribution of pixels. It works well with clearly defined phases that form distinct peaks on the thresholding graph.

The resulting detection in a binary plane (blue) cannot be used in the automated analysis routine normally applied to measure other grain size structures.

A SPECIFIC INSTRUCTION FOR MARTENSITE IN VISION PE



Clemex Vision PE now has a way of processing images of various martensitic structures which does not depend on gray level thresholding. This breakthrough was accomplished after months of work on hundreds of images from industry partners.

The powerful Martensitic functionality is inserted at the beginning of an automated image analysis routine to detect the boundaries of grains. Several parameters allow the user to fine-tune detection.

The final detection of the grains (yellow) is then measured automatically and a report can be produced optionally according to ASTM E-112. The binary plane can then be inverted to show only the boundaries, for validation purposes.