



The Information You Need...When You Need It.

## **Optical Microscopy**

Optical Microscopy (OM) encompasses all of the laboratory techniques that use visible light, including macro camera, stereo binocular, and compound microscopes.

### **OM Applications Include:**

- Photo Documentation
- Correlative Imaging in combination with monochromatic techniques, such as Correlative OM/SEM
- Materials Evaluation and Development
- Failure Analysis and Quality
- Art and Advertising

### **Data Presentation:**

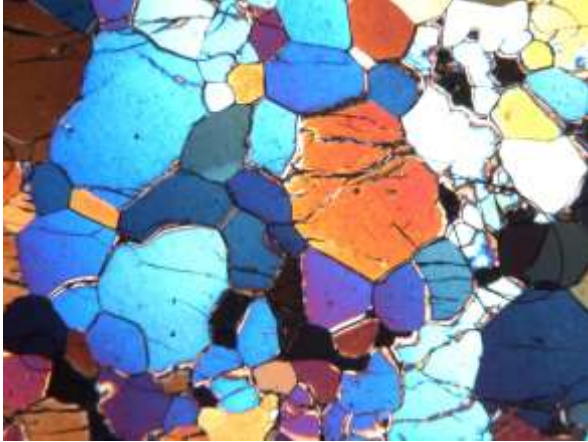
Optical Microscopy produces a micrograph: a picture of the sample under normal or enhanced conditions. Photos may be annotated with text and measurement data.

### **Sample Constraints:**

Samples may be examined as-is, crushed, ground and polished, or cut into very thin slices. Samples may be as large as square feet or as small as a few particles.

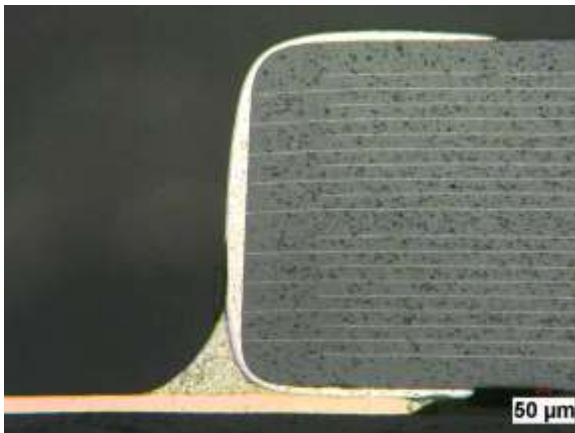
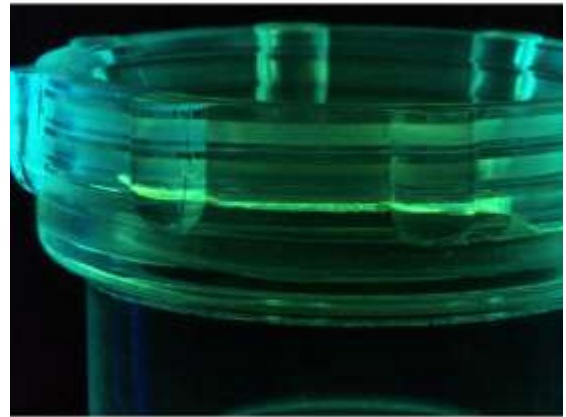
Because many OM techniques consume sample, or add other materials, the order in which analyses using multiple techniques are done is important.

**Examples of Data:**



Micrograph of a visually transparent, colorless mineral sample using polarized light technique. The colors are due to optical wave interference. (Left)

Macro image of a crack in a transparent plastic housing which has been infiltrated with a fluorescent dye, revealed by ultraviolet illumination. (Right)



Polished section of a ceramic capacitor soldered to a printed wiring board. (Left)

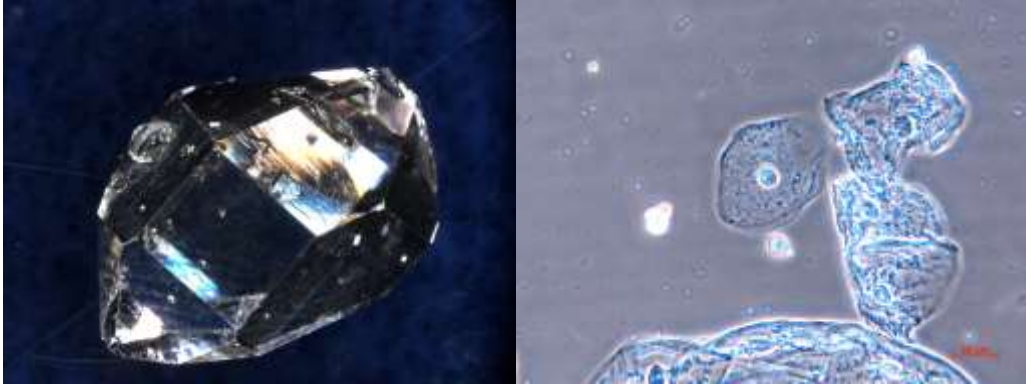
Low magnification view of a fractured wire, preliminary to SEM-EDS. (Right)



Oblique view of a printed wiring board, using extended-focus technique. (Left)

Macro photo documenting the setup for the extended focus photo Left below: Low magnification view of a natural quartz crystal from Herkimer, New York. (Right)





Phase contrast image of oral epithelial cells, a microscopic "selfie"! (Above right)