Kirk-Othmer Encyclopedia of Chemical Technology.

IMAGING TECHNOLOGY

Imaging systems, consisting of specialty chemicals and techniques, are used to produce copies or photographic representations of macroscopic entities that can be seen by the human eye. Moreover, imaging systems are utilized to produce representations of what is outside the range of human vision.

Visualization of the unseen, whether of the microscopic world of atoms and molecules, or of macroscopic materials hidden from view, has long been a goal of chemists, chemical engineers, and materials scientists wishing to comprehend the physical world. Increased capabilities in combined analytical methods (qv) such as spectroscopy (qv) (see also Infrared technology and raman spectroscopy; Magnetic spin resonance), microscopy (qv), and spectrometry (see Mass spectrometry), aided by computer technology (qv) and advances in lasers (qv) as well as electronics and detection systems (see Photodetectors), have led to the production of images representative of individual atoms and molecules as well as those of aggregate surfaces and interfaces. The techniques of visualization are also used in medicine and in the fine arts.

An alphabetized list of *Encyclopedia* articles that are directly related to the various imaging technologies follows. This list is not meant to reflect every mention of or reference to imaging in the *Encyclopedia,* rather it is to serve as a guide to those articles where imaging is a primary concern.

Color photography	Photochemical technology
Color photography, instant	Photoconductive polymers
Electrically conductive polymers	Photography
Electrophotography	Printing processes
Fine art examination and conservation	Radioactive tracers
Information storage materials	Radiopaques
Lithographic resists	Surface and interface analysis
Medical imaging technology	Thermography
Nondestructive testing	X-ray technology

Related Articles

Infrared technology; Magnetic spin resonance; Mass spectrometry; Photodetectors