Image Analysis
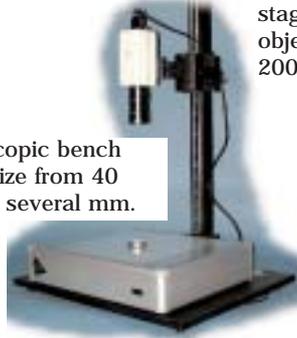
MICROVISION
INSTRUMENTS

Design a vision system

Motorized microscope (3 Axes , X, Y , Z-Focus)
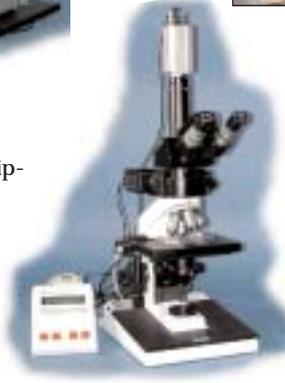object size from 0.1 micron to 15 µm.

Stereo magnifier, equipped
with a motorized scanning
stage.
object size from 20 µm to
200 µm

Macroscopic bench
object size from 40
µm to a several mm.

Microscope with a manual X, Y stage equip-
ped with encoders for measurements
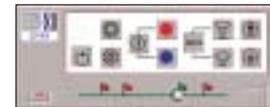outside the current field of view.

Acquisition by scanner or a digital
camera controlled by a Twain dri-
ver.

Monochrome camera
(high sensitivity)

CCD color digital camera
IEEE 1394 (1,450,000
Pixel)

A macroscopic zoom (2 x to 90 x)
remotely controlled by software
with a motor driven auto-focus
system

A halogen lighting
generator for annular
optical fibers
Semi-rigid fibers, emerging annular
fibers.

Digitalization kit with an acquisition board to
the PCI bus, with connecting cable for 4 came-
ras (RGB, YC, PAL).

Computer system with custo-
mized configurations running
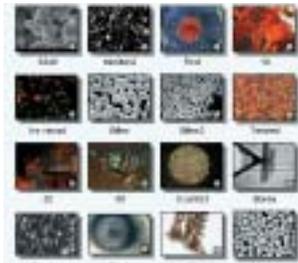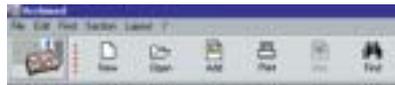under the Windows NT/2000/XP operating systems.

Acquiring, Archiving : Archimed Pro
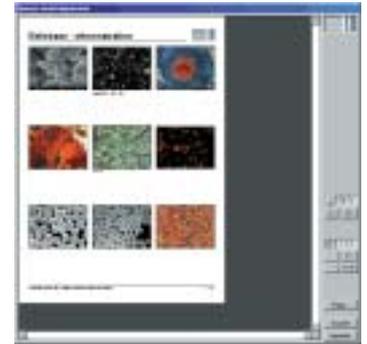
Database

The database module creates an image database using Access® format, allowing multi-criteria searches in user selected headings. A "small image" index is automatically created and is printable.

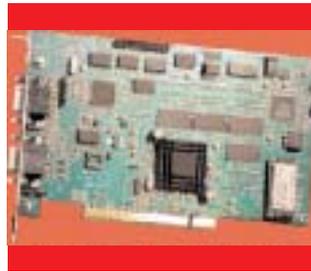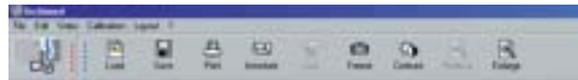"Small image" index

Identity sheet

Search criteria

Catalog formatting

Real time video

The real-time video module displays an image digitized by the acquisition board. The image can be calibrated, annotated and enhanced in real time.

Options allow the accumulation of images for weakly illuminated objects and image averaging to eliminate random image noise.
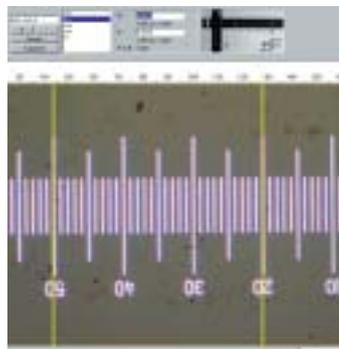
Frame grabber

Positive Reaction

Image enhancement, averaging

Overlay

System calibration

Image integration and annotations

0 µm100   200   300   400   500

Adjustable calibration scale

Reporting, Montage : Archimed Pro
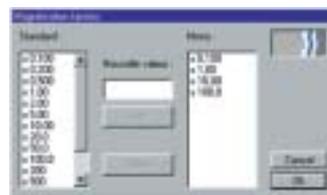
Image processing

The image processing module allows modification of the image to enhance it, make it clearer or to accentuate its colors.
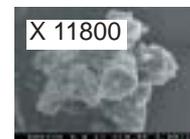A highly innovative function allows setting the image's size to a known optical magnification factor.

Contrast enhancement, clarity improvement

X 10000

X 11800

Magnification adjustment

Colour adjustment and modification

Report

The report module controls an image presentation form, along with the free positioning of photos, insertion of a logo and annotation of legends. The images are directly "imported" into the report from the database, camera or processing module.

Legend annotations
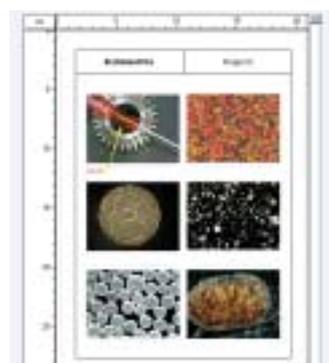
Form formatting

Cartography

With an indexed X, Y stage, the mapping module allows you to arrange into a single image several acquired images.
The reconstructed image becomes a high definition image which can be printed and even exported to other software.

Final montage

Positioning grid

Software

Videomet

VideoMet is software for taking measurements of components. It includes many powerful interactive measurement tools. With its edge sensor using image analysis VideoMet provides all the facilities of a powerful video profile projection system for metrology.

VideoMet permits repetitive analysis of the same locations on different components. The measurements include : position, length, width, elongation, diameter, radius, equivalent diameter, perimeter, area and form factor.
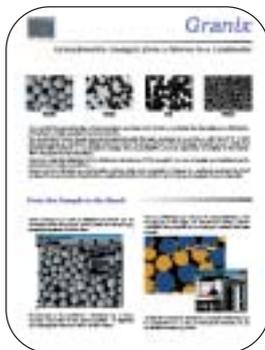
Areas

Areas measures the area fractions of different phases of a materials, classified and defined by the user.

Areas provides the following results :
• Area
• Area fraction %

Granix

Granix analyzes particle size using non-contact electronic screening. This technique rapidly generates particle size distributions of a population, which are then expressed in a format declared by international standards.
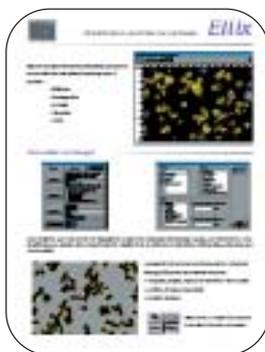
Gsizer

GrainSizer provides a rapid estimate of grain index according to the ASTM E-112 and NF04-102 standards.
The following results are stored :
Mean grain area, average number of grains per mm2, ASTM or NF index.

Ellix

Ellix is software for automatically analyzing shapes, by fitting a shape to objects in each image according to various geometric models.

Ellix provides a very complete graphical representation module : distribution histogram, scattergrams and a compass of orientations whose axes and scales are completely customisable. Statistical analyses are also provided.

Filtrex

Filtrex is an automatic particle and fiber counting and sizing application.

WIth an X,Y Automatic stage, Filtrex thoroughly analyses filters and membranes of any kind.
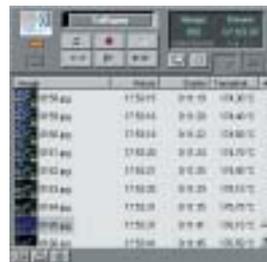
Replay

Replay is a digital video recorder, which automatically records video images from a PC equipped with an acquisition board.

The recording is executed in 4 modes :

• Manually when prompted

• Periodically eg time lapse

• Automatically change is detected

• When the image stabilizes

With the Thermo software, Replay records a session of images with the temperature inset into each image. The sequences can be converted into AVI film.

The temperature value can be taken from a Mettler ™ or Linkam™ controller associated with an FP series or Linkam series heating plate

Company profile and services

Microvision Instruments

Microvision Instruments, a French company created in 1992 with a capital of 135 000 Euros located at Evry (30 km south of Paris nearby the Orly airport), designs and markets image analysis based measurement systems.

Its customers are manufacturers and public/private research agencies : Alcatel, BP, Cabot, CNRS, Dassault, Du Pont de Nemours, Inserm, Knauf, Lipha, L'Oréal, Nestlé, Philips, Aventis, Sanofi-Synthelabo, Altadis, Thales, Pfizer. And, its systems are installed throughout world in such countries as Belgium, Brazil, Spain, Great Britain, Hungary, Italy, Luxemburg, Japan, Switzerland, Czech Republic, Egypt, USA.

Thanks to the services provided, Microvision Instruments is capable of responding to any problem formulated by its customers, writing the specification to devise solutions, producing them, and delivering a finished and installed product. These services are provided alone or as a complement to standard products.

Services

Microvision provides complete standard or dedicated systems. For each system, Microvision supplies the micrometers or the calibration rulers with a COFRAC® or NAMAS® certificate, the peripheral consumables (for thermal printers, inkjet printers, etc.), lenses and customized lighting systems.

Our Expert Measurement department proposes for a reasonable price to analyze a batch of samples. In the case of specific studies, our partners equipped with our systems remain at your disposal to study the results of your analyses.

Scanning stage with a traveling range of 300 mm x 300 mm, on a Tech Systèmes ® bench.

Manual X, Y stage adapted for a Navitar ® zoom on a Tech Systèmes ® bench.

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