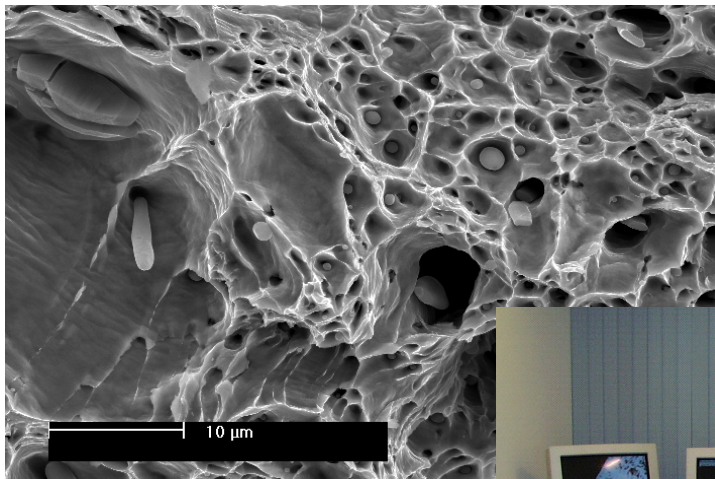


Material Examination without limits



Fracture

- Metals**
- Fibres**
- Plastics**
- Paper**
- Paint**
- Biological material**

- Development**
- Production problems**
- Corrosion problems**
- Damages**
- Adhesion**
- Surfaces**

Technology and tasks

At FORCE Technology we perform the market's most advanced examinations of surfaces, by use of the ESEM/FEG-technology (Environmental Scanning Electron Microscopy/Field Emission Gun).

In development of materials and products this equipment facilitates the possibility of testing and optimising parameters such as wear and adhesion, corrosion protection, strength and finish.

With the ESEM/FEG it is possible to examine conductive as well as not-conductive materials, such as e.g. metals, fibres, plastics, paper, building materials and paint/varnish. Actually, only your imagination sets the limit. E.g. the equipment might examine biological material such as plant fibres, fungi and microbes. Also moist or damp samples such as filters may be examined which is unique for the technology of ESEM.



FORCE Technology's ESEM/FEG equipment

Even dynamic examinations such as dipping liquid onto a surface at varying pressure and temperatures can be performed. The configuration also includes the most advanced analysis programme for qualitative and quantitative determining material composition.

Examples

Typical examples are :

- Optimising material selection
- Examination of fracture in metals and plastic
- Determinating corrosion types
- Element distribution in cross sections

The ESEM technology is a fantastic tool for challenges like "What is this?".

Many assignments are carried out in collaboration with FORCE Technology's many specialists within material technology.

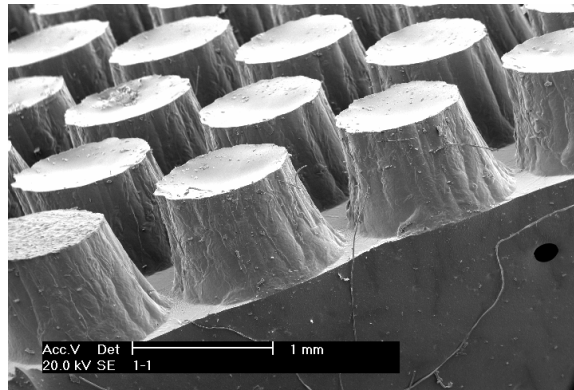
Analysis possibilities

With ESEM it is possible to:

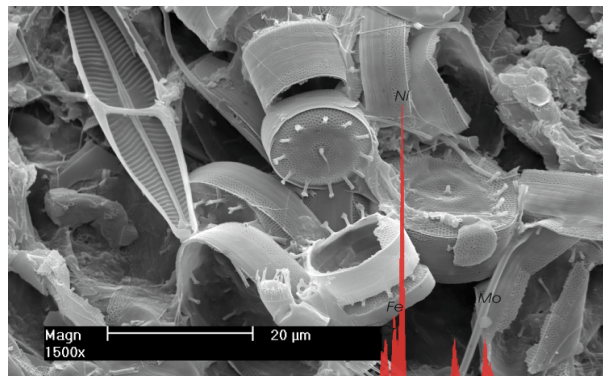
- Analyse the surface topography of samples
- Analyse the element composition
- See element distributions
- Identify contamination on surfaces
- Identify concentration gradients of elements in micro sections.

FORCE Technology's ESEM differs from a traditional scanning electron microscope by being able to:

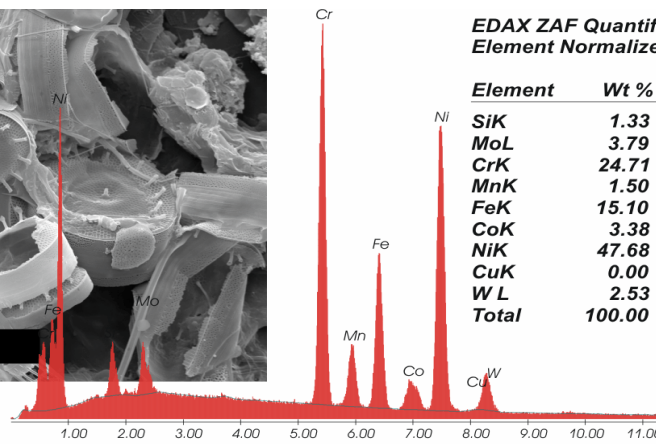
- Work at absolute pressure
- Work at varying temperatures, pressure and humidity
- Analyse damp or moist samples
- Analyse not-conductive samples
- Perform dynamic testing in the microscope.



Cast of an industrially used screen - replica technique was applied so that the examination could be made without production stops



Diatoms



ESEM Online - because we know that your time is money

When samples are submitted for ESEM analysis with FORCE Technology, it is possible for the customer via ESEM Online actively to take part in the analysis. All that is needed is an Internet connection and a telephone for communication with the ESEM specialist.

Thus ESEM Online is a fast, flexible and cost saving facility allowing the customer actively to participate in problem solving without needing to spend time and money to travel to FORCE Technology.

See www.esem.dk

Supplementary services

FORCE Technology offers a wide range of material analyses such as for metals, plastics, composites and concrete, e.g.:

- Determination of alloying elements and impurities in metal alloys by use of Optical Emission Spectrometry
- Positive material identification (PMI), to be performed at the customer's
- Wet chemical analysis at special requirements to analysis accuracy or detection limit
- Microscopy
- Mechanical testing
- Metallurgical and metallographic examination
- Damage investigation
- Micro element analysis.



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