EVO® MA and LS Coolstage

Product Information

Introduction

The EVO® series of scanning electron microscopes provides imaging solutions for different types of non conducting specimen. One important application area is the ability to study the interaction of liquid water with materials and to maintain the structure of fauna and flora by preventing dehydration. In order to image liquid water it is useful to cool the specimen to just above 0°C so that the water vapour pressure in the microscope is minimised. A Peltier couple integrated into a dovetail mounted cool-stage head achieves this cooling.

The new EVO® Coolstage design builds upon in-depth experience with wet specimen analysis to deliver class leading coolstage performance.

The Coolstage can also heat the specimen stub to 50°C to study the melting of low temperature materials.

Applications

Materials Analysis

- Water action on cement, pharmaceuticals
- Water transport through fibres
- Low melting point materials eg chocolate
- High vapour pressure polymers
- Contact angles
- Formation of ice

Life sciences

- Plant surfaces and internal structures
- Fauna microstuctures
- Water action on seeds
- Slime studies

EVO® Coolstage

Instrumentation

The EVO® Coolstage unit comprises an independent floor standing unit and the dovetail fitting coolstage head. The SmartSEM™ control scheme provides the user with a graphic based upon the water phase diagram to control humidity at the specimen.

Following Carl Zeiss NTS's philosophy to protect our customer's investments, the EVO® Coolstage is compatible with the installed base of EVO® series and previous 1400 series microscopes.

ZEISS

We make it visible.

Fig. 1:
Textile
(25 kV, 700 Pa, 1 °C, air)

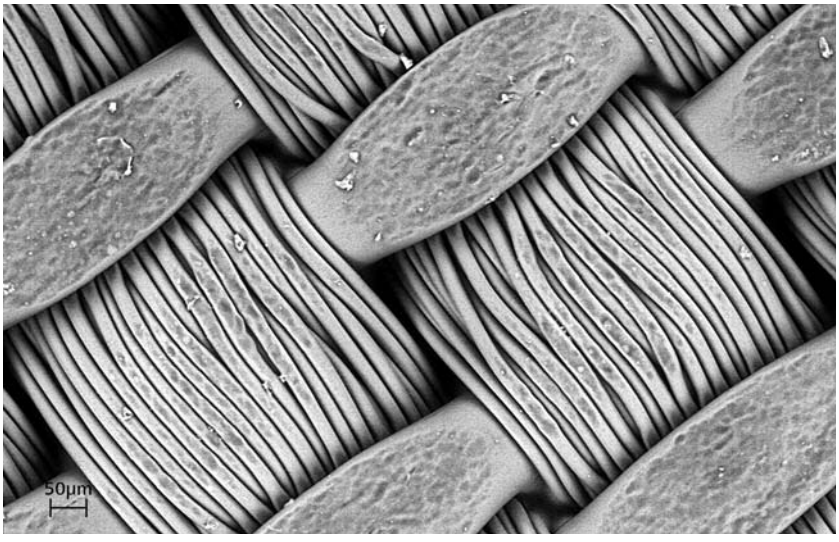


Fig. 2:
Caterpillar
(25 kV, 15 Pa, -25 °C, air)

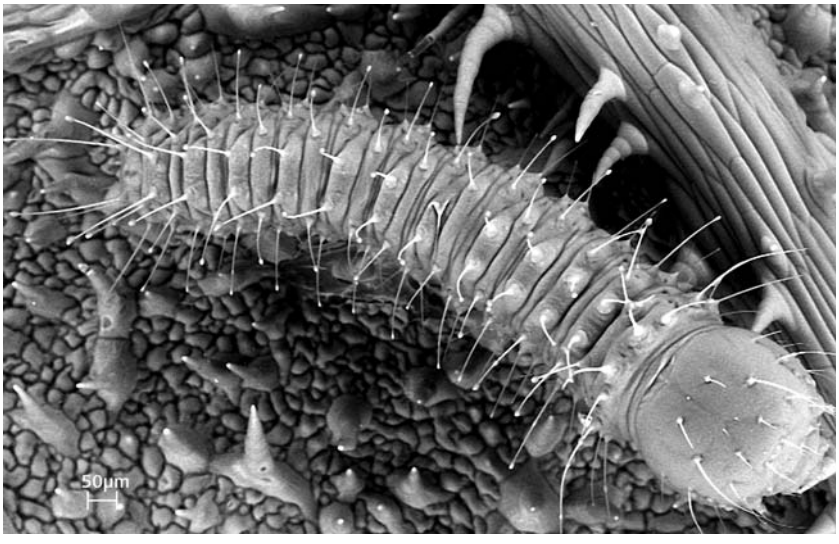
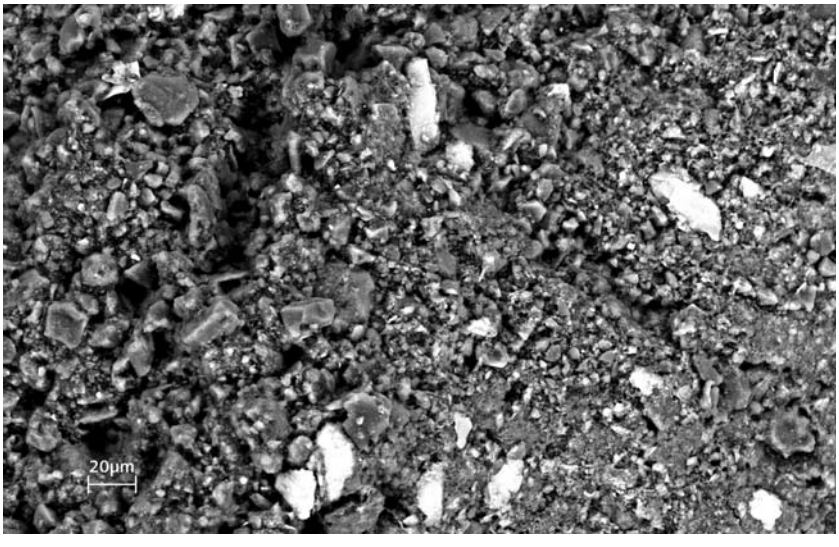


Fig. 3:
Cool chocolate
(25 kV, 30 Pa, 0 °C, air)



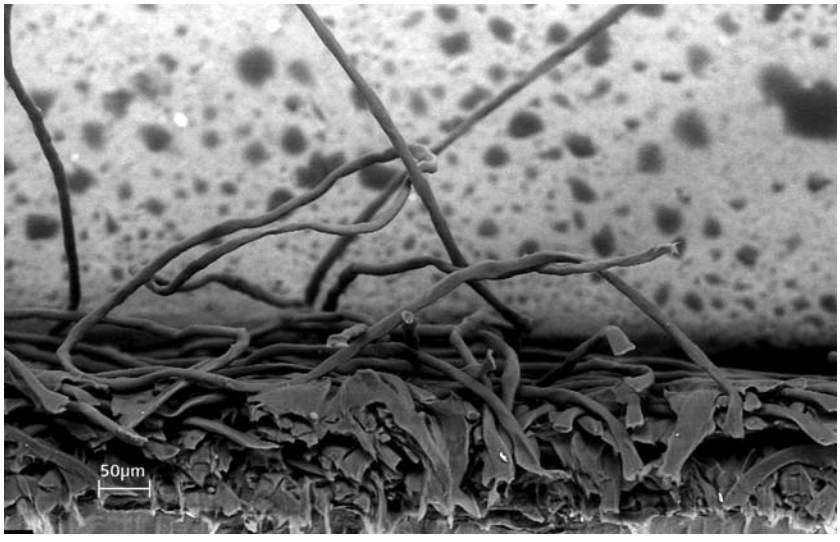


Fig. 4:
Wet polymer micro filter
(20 kV, 700 Pa, 1 °C, H_2O)

Fig. 5:
Water saturated fibres
(25 kV, 600 Pa, 2 °C, H_2O)

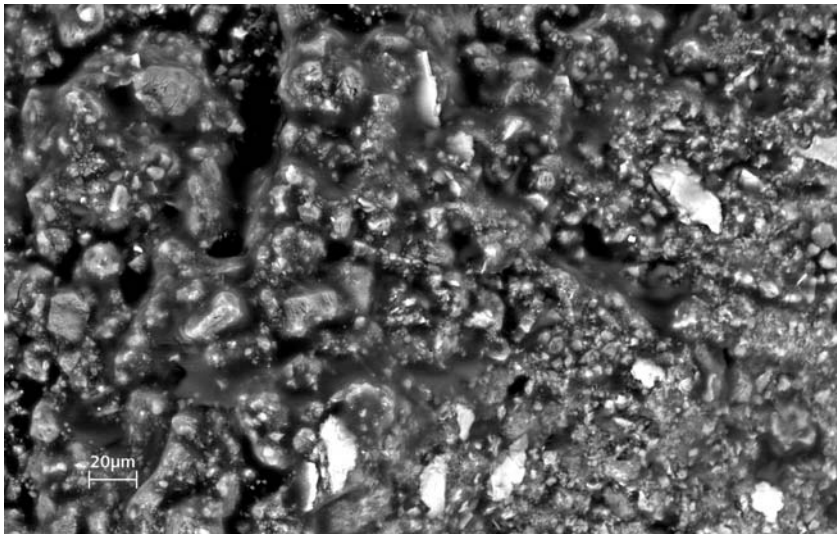
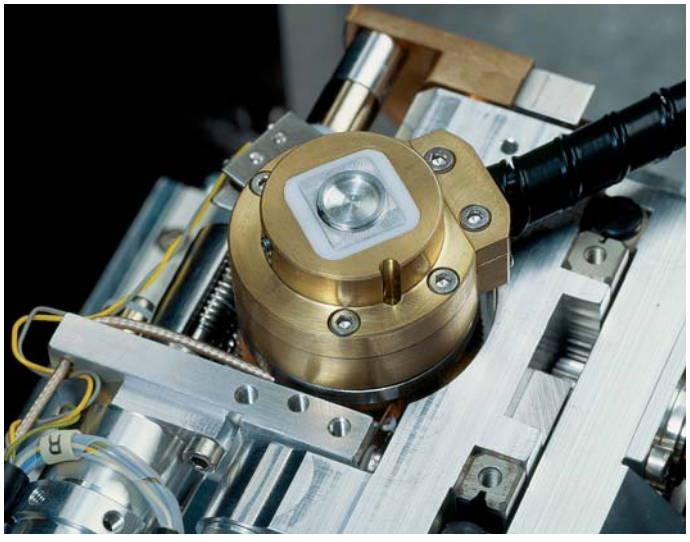


Fig. 6:
Hot chocolate – melting started
(25 kV, 30 Pa, 25 °C, air)



EVO® Coolstage on cartesian specimen stage

Maximum Information – Maximum Insight

More than 160 years of experience in optics has laid the foundation for pioneering electron and ion beam microscopes from Carl Zeiss. Superior integration of imaging and analytical capabilities provides information beyond resolution, unlocking the best kept secrets of your sample.

With a broad technology portfolio Carl Zeiss provides instruments both tailored to your requirements and adaptable to your evolving needs. With our highly versatile application solutions we endeavor to be your partner of choice.

Superbly equipped, regional demo centers provide you with access to our applications expertise developed in collaboration with world-class partners in industry and academia. Global customer support is provided by the Carl Zeiss Group together with an extensive network of authorized dealers.

Our mission at all times: Maximum Information – Maximum Insight.

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