

EVO®: Stubscope

Authors: Veronika Kugler, Ken Robinson,
Dr. Stewart Bean, John Yorston

Date: July 2008

Introduction

Throughput of the scanning electron microscope can be limited by the need to find small features on a large specimen. The situation is more challenging when imaging with the BeamSleeve® owing to the restricted field of view necessitated by the need to limit gas flows into the column.

Infra red chamberscopes are in regular use to assist with navigation within the chamber. The Stubscope extends the concept to permit a monochrome infra red image of a specimen mounted on an individual stub.



Stubscope and SmartSEM® "Image Navigation"

The Stubscope is an optional internally mounted IR camera that provides a high resolution view of an individual stub. Image Navigation is able to accept the Stubscope image and use it to navigate the specimen. The current position of the specimen under the beam is indicated on the Stubscope image within Image Navigation.

Application areas

- **Life Science.** All wet specimens when used with the BeamSleeve®, particularly to confirm water drops are stable during pumpdown from atmosphere.
- **Materials Analysis** especially in variable pressure conditions with the BeamSleeve®
- **Carousel mounted stubs.** Images of individual stubs can be collected during pumpdown

Customer benefit

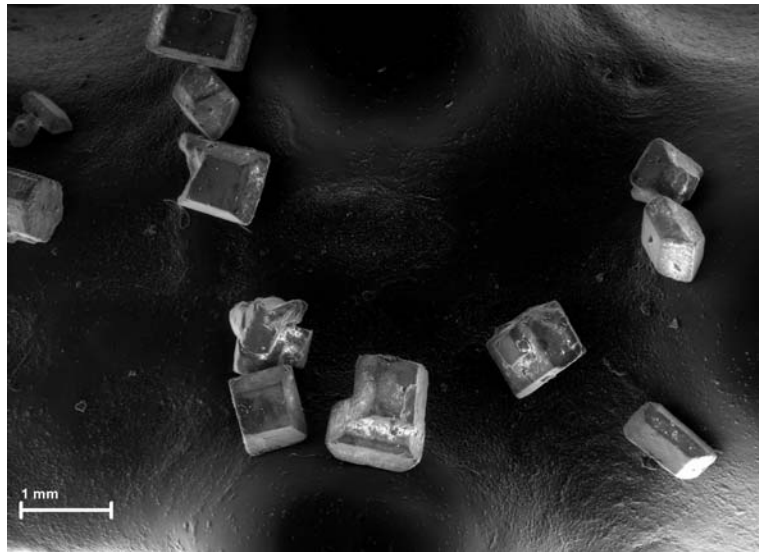
The benefit for users are

- Reduced time to find features
- Accuracy in locating the correct feature of interest
- The image can be stored within the folder of specimen images

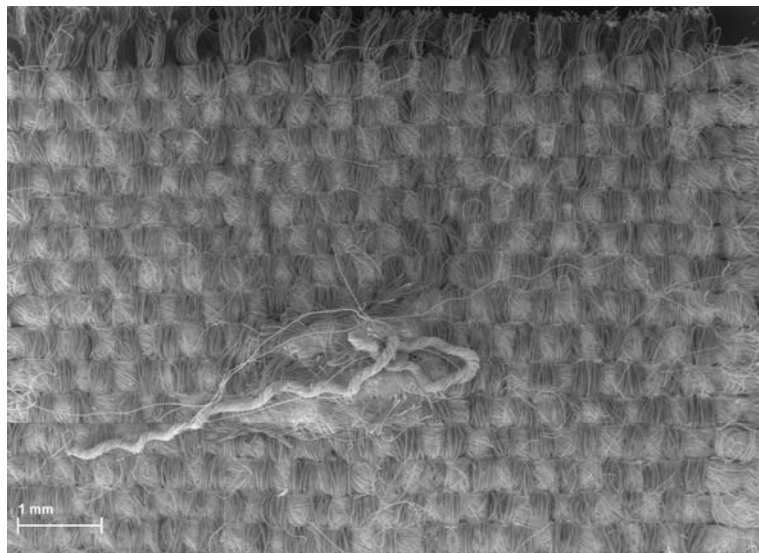


We make it visible.

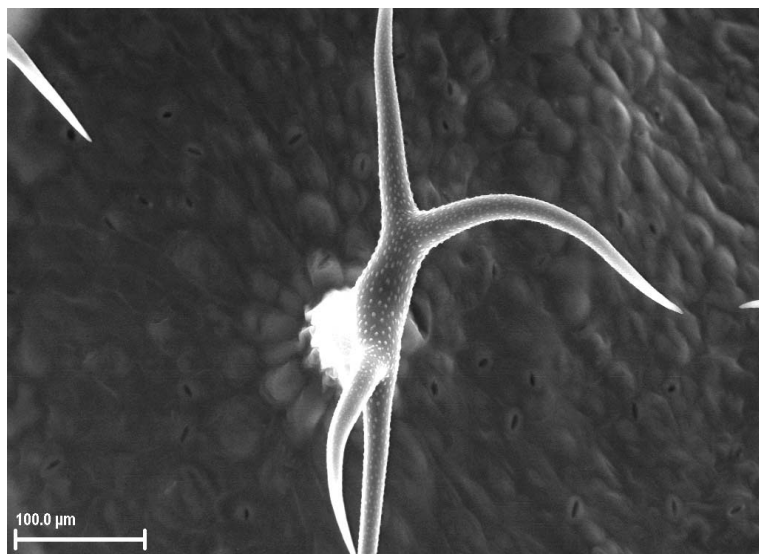
*Fig. 1:
Jelly Beans*



*Fig. 2:
Fabric*



*Fig. 3:
Arabidopsis*



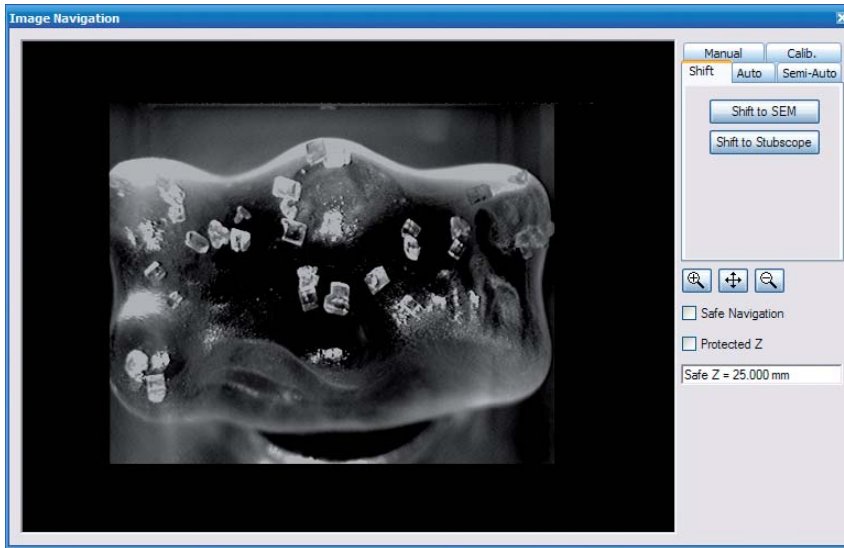


Fig. 4:
Jelly Beans

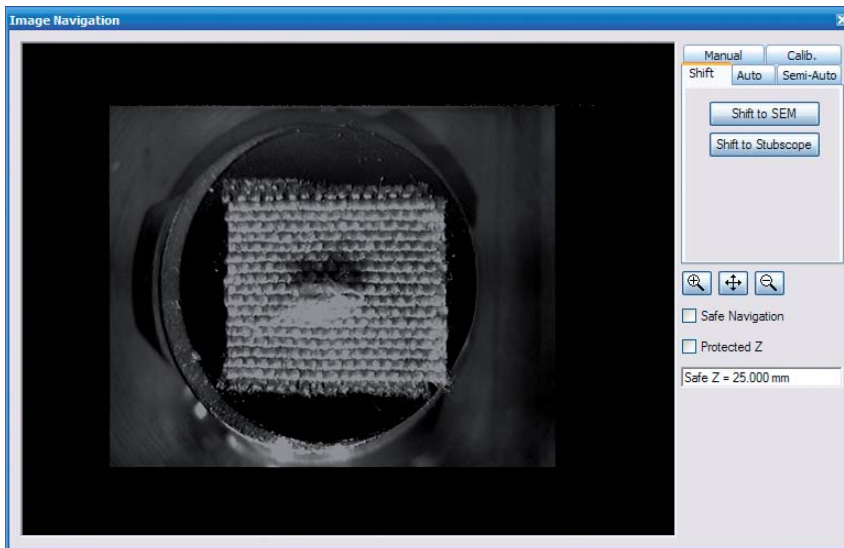


Fig. 5:
Fabric



Fig. 6:
Seeds on Coolstage with
water drops confirming
humid conditions are
achieved

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.

Carl Zeiss NTS GmbH

Carl-Zeiss-Str. 56
73447 Oberkochen
Germany
Tel. +49 73 64 / 20 44 88
Fax +49 73 64 / 20 43 43
info@nts.zeiss.com

Carl Zeiss NTS, LLC

One Corporation Way
Peabody, MA 01960
USA
Tel. +1 978 / 826 1500
Fax +1 978 / 532 5696
info-usa@nts.zeiss.com

Carl Zeiss NTS Pte. Ltd.

50 Kaki Bukit Place #04-01
Singapore 415926
Singapore
Tel. +65 65 67 / 30 11
Fax +65 65 67 / 51 31
info.sea@nts.zeiss.com

Carl Zeiss NTS Ltd.

511 Coldhams Lane
Cambridge CB1 3JS
UK
Tel. +44 12 23 41 41 66
Fax +44 12 23 41 27 76
info-uk@nts.zeiss.com

Carl Zeiss NTS S.a.s.

Zone d'Activité des Peupliers
27, rue des Peupliers -
Bâtiment A
92000 Nanterre
France
Tel. +33 1 41 39 92 10
Fax +33 1 41 39 92 29
info-fr@nts.zeiss.com

www.zeiss.com/nts



We make it visible.