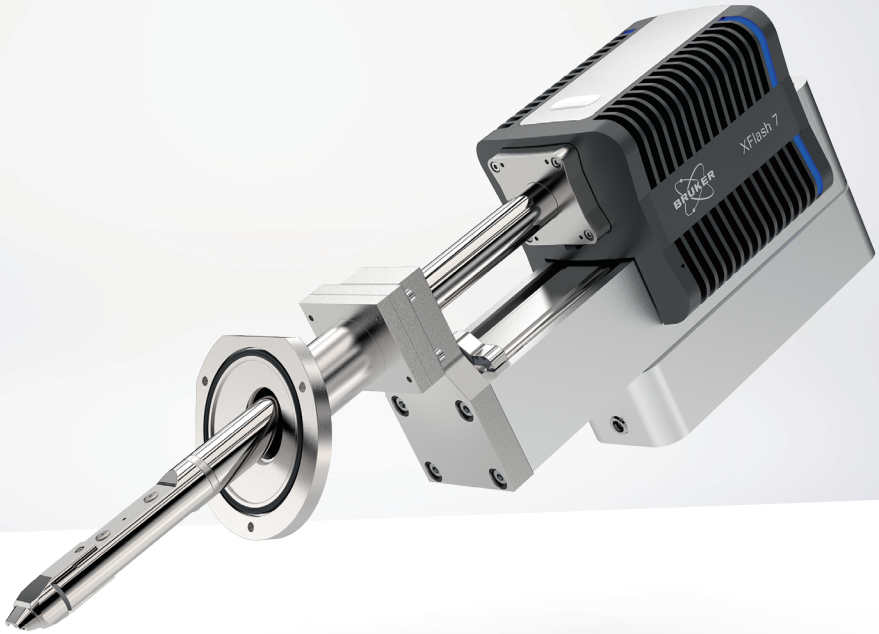


EDS

XFlash® 7100oval

The high collection angle EDS detector for SEM, FIB-SEM and STEM-in-SEM

As part of the XFlash® 7 detector family, Bruker offers the windowless XFlash® 7100oval EDS detector. The oval-shaped 100 mm² detector is designed for challenging applications. This includes electron transparent specimens as well as samples that require measurements at low kV and low beam currents.

The large area XFlash® 7100oval silicon drift detector (SDD) is carefully customized for the specific geometry in SEM. The unique oval detector shape and state-of-the-art slim-line design allow optimization of the acquisition position to achieve a solid angle for X-ray collection of up to 0.4 sr without compromising the SEM performance.

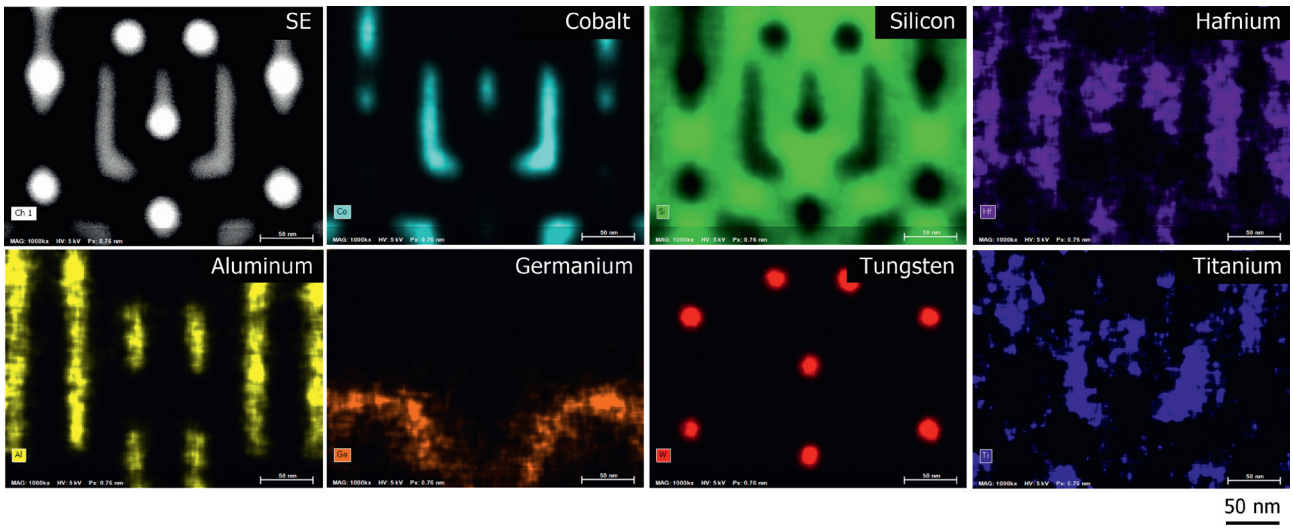
In combination with the specially adapted hybrid signal processing unit, this detector can deliver an energy resolution of ≤126 eV at the Mn Kα line and output count rates of up to 600,000 cps.

Your Benefits

- Operate your SEM at it's best for EDS – at up to 30 kV accelerating voltage on all SEM types
- Compatible with all SEMs, including those with immersion lens mode

- Quantitative analysis even at acceleration voltages of up to 30 kV
- Superior light element detection and low energy performance with windowless detector design
- Analysis of beam sensitive samples at low kV
- Short analysis time and fast data acquisition due to large detector area and large collection angle
- A high take-off angle of typically 35° guarantees high spatial resolution and meaningful analysis of topographic samples
- Unimpacted SEM performance with non-interfering cooling system, automatic detector retraction system and interlocks for safe operation
- Safe performance of low vacuum measurements down to 30 Pa in a dry nitrogen atmosphere
- Bruker's versatile ESPRIT analysis software provides perfect correlation with simultaneously acquired EBSD and SEM XRF data
- Optional welded bellows and X-ray tight shutter

Analysis of a 7 nm node FinFET bulk sample



High spatial resolution EDS map of metal layer (M0) over a FinFET structure acquired on a bulk sample in SEM. The M0 layer is used as a contacting layer for the FinFET device. The finest Cobalt (Co) structures measured are ~ 6 nm in size. Overlapping elements like Si Kα (1.74 keV), W Mαβ (1.77 keV) and Hf Mαβ (1.65 keV) are deconvoluted automatically in the map. The data is acquired with a 300 nm horizontal field-of-view at 5 kV SEM HV for approx. 5 min with an output count rate of > 30000 cps.

All configurations and specifications are subject to change without notice.
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