

Octane Elite EDS System

Product Bulletin – EDS



- Octane Elite EDS System with motorized slide
- Highest resolution with premium resolution option
- Increased light element sensitivity
- Outstanding low-energy performance
- Silicon nitride window
- Market-leading throughput count rate
- Integrated EDS-EBSD-WDS option with Trident Analysis System

The game-changing advancements in the Octane Elite EDS System with Octane Elite Silicon Drift Detectors (SDDs) takes EDS analysis to the next level. This system includes detectors with a silicon nitride (Si_3N_4) window, offering remarkable improvements in low energy sensitivity for light element detection and low kV microanalysis. The Octane Elite detectors also use technology that yields high-speed X-ray data processing within a smaller and fully vacuum encapsulated detector device.

Best light element performance

The silicon nitride window offers major improvements compared to a polymer window, leading to improved light element performance and significantly more critical data for the analyst.

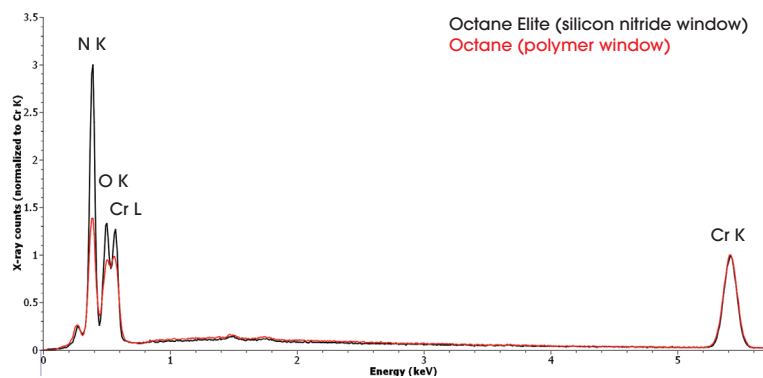


Figure 1. Spectra acquired from a chromium nitride sample at 10 kV. Comparing the scaled spectra to the Cr K peak clearly shows the increased nitrogen and oxygen peak intensities achieved with a Si_3N_4 window.

Si_3N_4 window

The silicon nitride window offers superior low energy transmission compared to a polymer window.

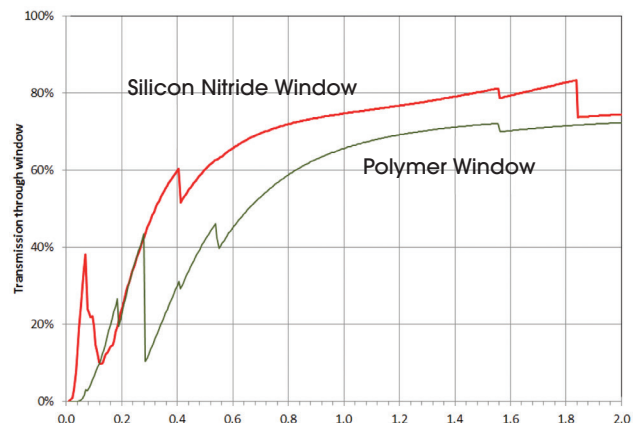


Figure 2. The Si_3N_4 window offers superior low energy transmission compared to a polymer window.

Specifications

- Octane Elite SDD options:
 - Plus (30 mm²)
 - Super (70 mm²)
- 125 eV resolution at Mn K α at 10k cps
 - 123 eV premium option
- Carbon detection above 750k input cps for ultra-fast mapping and particle acquisition
- Detection range: Al L (73 eV) to Am
- Throughput: 850k ocps at 2.0m icps
- Al L to Al K peak height ratio of 1:1 at 2.5 kV
- Cooling: Peltier
- Supplied with APEX Advanced Software for EDS
 - Smart phase mapping
 - Dynamic element mapping
 - Smart quant
 - Multi-user capability
 - Drift correction
 - CompoMaps
 - Advanced reporting
 - Remote licensing

Benefits

Low kV performance

The mechanical properties of Si₃N₄ allow the use of thinly fabricated windows, offering a great benefit in terms of sensitivity and optimal low voltage analysis.

Optimized SDD electronics

- Fast pulse processing for mapping and quantification
- Optimized data quality at all count rates
- High-resolution quantitative analysis at mapping speeds greater than 400,000 output cps

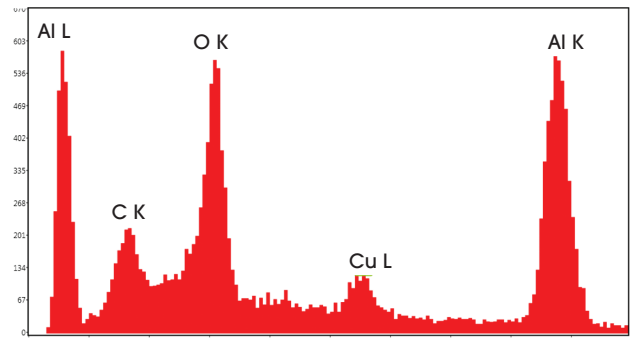


Figure 3. Al L to Al K peak height ratio of 1:1 at 2.5 kV.

Throughput

EDAX EDS Systems with advanced detection electronics offer the highest throughput count rates for the best possible analysis and increased productivity.

Reliability

The material properties and durability of Si₃N₄ ensure the most robust and reliable detectors available for all EDS applications.

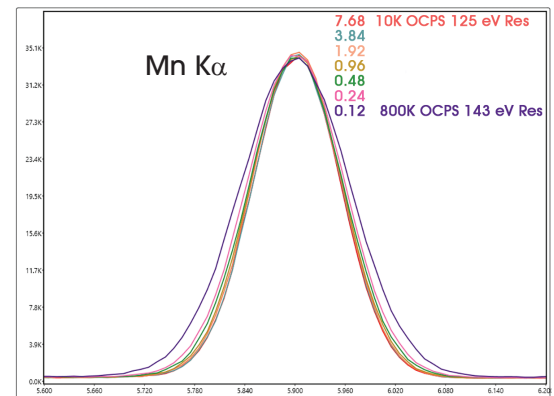


Figure 4. 125 eV resolution at Mn K α @ 10k cps.

Motorized slide

The motorized slide offers full control of the detector via the software and is optimal for analytical flexibility. It is ideal for all FIB systems.

APEX Software for EDS allows users to optimize their analysis time and get the best possible data from their sample

APEX™ ensures high-quality, accurate results and increased productivity with its easy-to-use interface, live-time graphical display, and simultaneous review mode.

Conclusion

The design enhancements and analytical benefits of the Octane Elite EDS System ensure that it remains the platinum standard for analysts who face materials characterization challenges that demand the full range of analysis options.