# AZtecBattery

## Dedicated, Flexible & Fast Li-ion Battery Powder Inspection in the SEM

**AZtecBattery** is a dedicated tool for the detection of contamination in powders used in the Li-ion battery supply chain – from mining through to manufacture. It monitors contaminant particle composition and morphology, allowing contamination sources to be identified and corrective actions taken.

AZtecBattery is a customised version of the AZtecFeature particle analysis platform which is optimised for the detection, measurement and analysis of contaminants commonly found in the powders used in the manufacture of Li-ion batteries.

### Dedicated

- Optimised for the analysis of battery materials
- Pre-set classification to identify common contaminants including both magnetic and non-magnetic metallic particles
- Custom reporting showing key contaminant details including type and size distribution

### Flexible

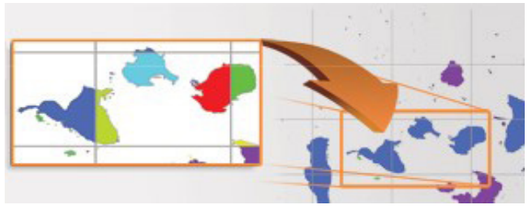
- Customise classifications for newly discovered contaminants
- Classify by composition and size – separate out dangerous contamination from what is acceptable
- Only acquire data from particles with morphology you define as dangerous with morphology filtering
- Easily deployable across supplier sites – ensuring consistent analysis over multiple instruments

### Fast

- Analysis rates > 30,000 particles per hour (dependent on hardware configuration)
- Combine up to 4 Ultim® Max detectors for the ultimate in throughput

### Certainty

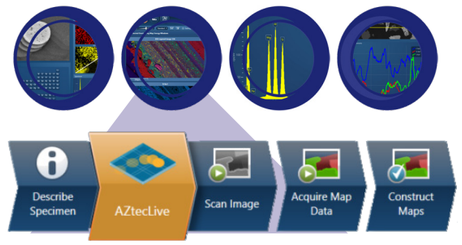
- Imaging based approach allows direct measurement of particle morphology and composition to help in discovering source
- Record the right morphology from large particles that break field boundaries with particle reconstruction



### AZtecLive Software

AZtecBattery is part of the AZtecLive NanoAnalysis suite which is equipped with several navigators designed to help take you through your analysis tasks step by step and ensure all users achieve the same high-quality results every time.

**Live | Mapping | Point&ID | LineScan | Feature**




### Real-Time Chemical Analysis

AZtecLive with Ultim Max or Xplore detectors delivers a system solution that takes the EDS technique from the static to the dynamic with real-time chemical analysis.

### Accurate and Repeatable

Even a novice user can achieve expert results consistently.

- Advanced TruQ® spectrum processing technology ensures that peaks are automatically identified and labelled, enabling even inexperienced users to achieve reliable sample and feature determination

| AZtecBattery Software | |
|---|---|
| Identify common contaminants with dedicated classification | ✓ |
| Acquisition settings optimised for finding contaminants | ✓ |
| Custom step notes to guide users through the analysis process | ✓ |
| Reconstruction of particles to ensure true morphology measurements | ✓ |
| Morphology filtering of particles to save time by only acquiring those of interest | ✓ |
| TruQ for accuracy and reliability in element identification and quantification | ✓ |
| Live chemical imaging | ✓ |

| Hardware - Ultim Max with X4 electronics | |
|---|---|
| Detector | Ultim Max |
| Sensor size | 40 $mm^2$ to 170 $mm^2$ |
| Detection range | Be(4) to Cf(98) |
| Resolution @130,000 cps | Mn Kα <127eV<br>F Kα <64eV<br>C Kα <56eV |
| Max. input count rate | >1,000,000 cps |
| Quantitative count rate | >400,000 cps |
| Controller | X4 (4 Detectors, 4 images) |

| Hardware - Xplore/XploreCompact with X1 electronics | |
|---|---|
| Detector | Xplore and Xplore Compact |
| Xplore sensor size | 15 $mm^2$ and 30 $mm^2$ |
| XploreCompact sensor size | 30 $mm^2$ |
| Detection range | B(5) to Cf(98) |
| Resolution | Mn Kα <129eV@100,000 cps |
| Max. input count rate | >1,000,000 cps |
| Quantitative count rate | >100,000 cps |
| In-field repairable | Yes |
| Controller | X1 (1 Detector, 2 images) |

### Reporting

A custom Battery reporting template is included to present the results that you need in the way that you need them.

### Step Notes & Profiles

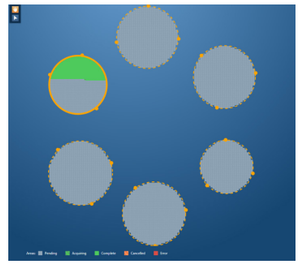
AZtecBattery includes integrated step notes in every step of the interface to guide the user through the analysis process.

- Step notes can be adjusted and customised to your own requirements
- All settings, step notes and classifications are stored as part of a user profile which can be copied from site to site to ensure consistent analysis regimes


### Automated Running

Maximise SEM usage by automatically running multiple samples unattended.

- Batch run management makes setting up multiple runs quick and easy. Compare a spectrum with a previously acquired spectrum even during acquisition
- Utilise layouts for fast run area definition



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