

New Lens Control and Imaging Electronics for ARL SEMQ Microprobes

ADVANCED MICROBEAM COLLABORATES WITH SEMTECH SOLUTIONS AND CONCORD UNIVERSITY TO CREATE THE SEMVIEW 8000 MICROPROBE ELECTRONICS SYSTEM

The ARL microprobe contains WDS spectrometers with high x-ray take-off angles, proportional counters with xenon ionizing gas, excellent light element detection limits, and mechanical components that are easy to service. Now we can offer a new electronics package to control all the electromagnetic lenses in the system and provide digital electron imaging, saving the user 2 million dollars when compared to buying a new microprobe. All the lens control electronics are air-cooled and do not require water. Quick and easy remote technical support is achieved using the SEMView Vshare program.

- Small Footprint
- Rugged and Serviceable
- Gun Supply: 30 KV
- Lens Control for:
 - Condenser 1
 - Condenser 2
 - Objective
 - Sweep Driver with upper and lower coils
 - Stigmator
- Custom Vacuum Interlock Electronics
- Customizable User Control Software
- Windows 11
- Up to 8,000 x 8,000 resolution

BEAM CURRENT STABILIZER

The SEMView 8000 provides electrical connections to permit the AM, Inc. - Beam Current Stabilizer to seamlessly interface with the condenser 2 lens control circuitry for long term beam current regulation.



POWERFUL IMAGING SOFTWARE – COMPACT ELECTRONICS



Figure 1: SEMView 8000 System installed on ARL SEMQ Microprobe

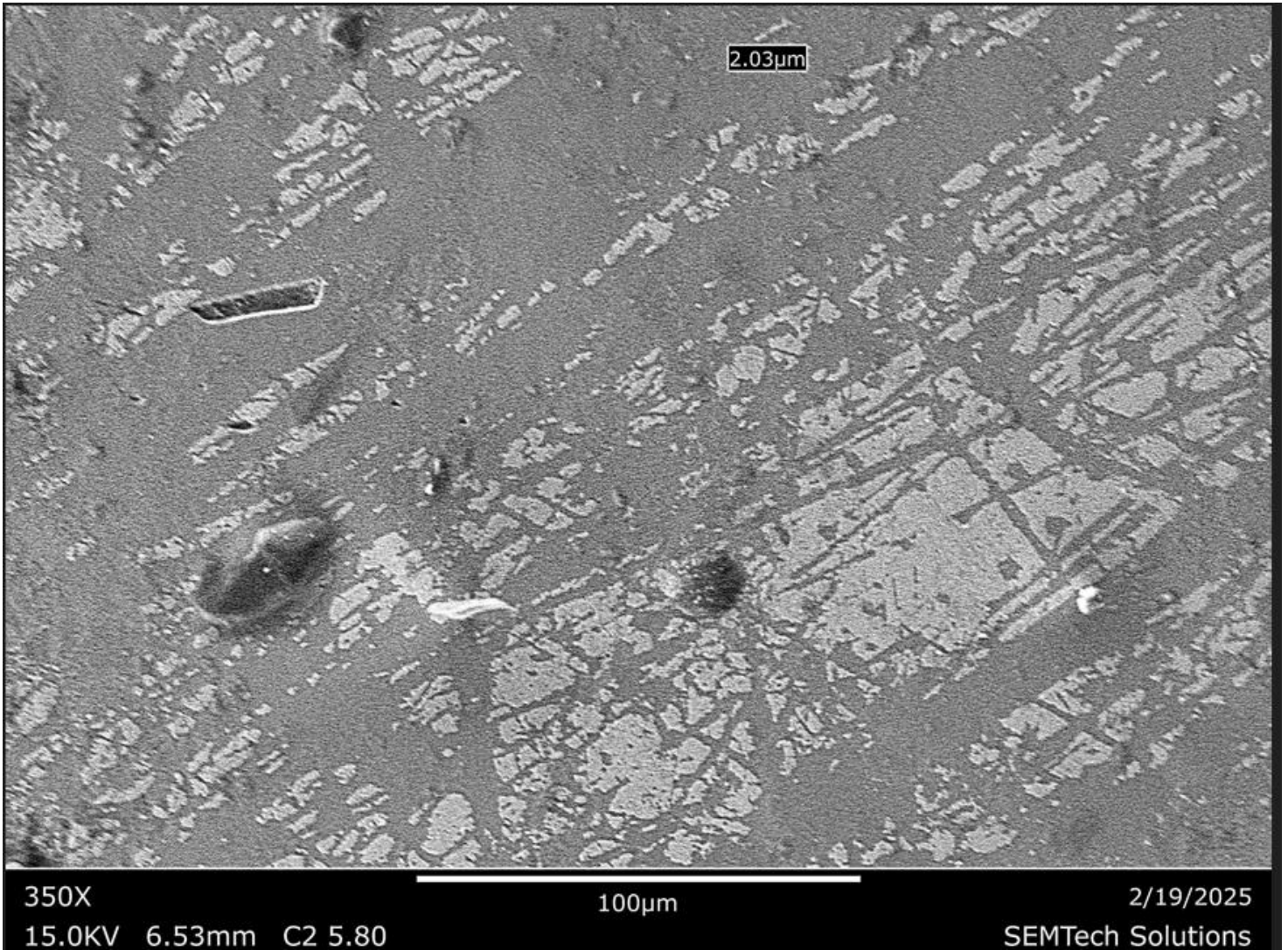


Figure 2: BSE Image - Solder

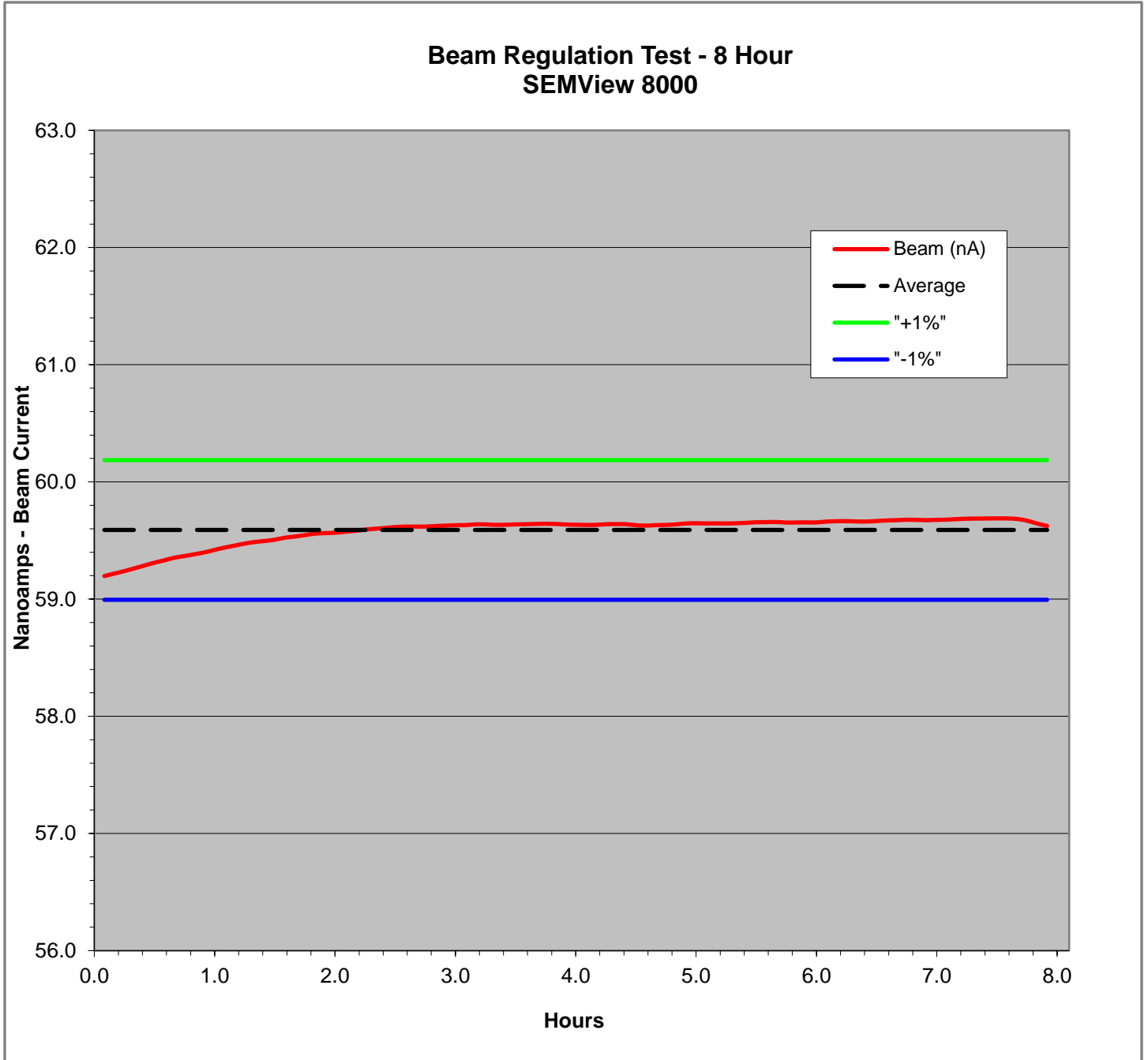


Figure 3: Chart of 8-Hour Beam Current Stabilizer Test

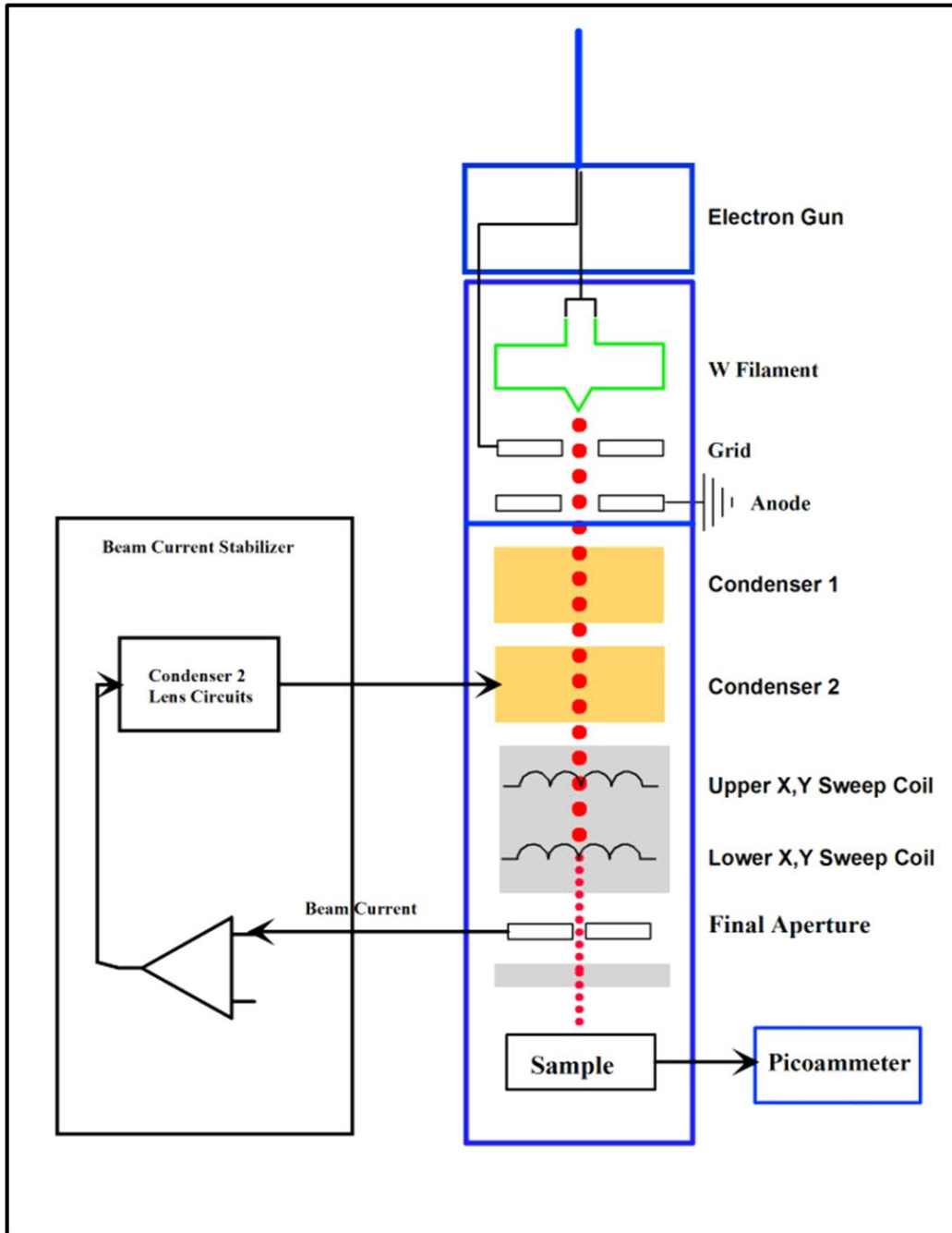


Figure 4: Overview of Beam Current Stabilization System

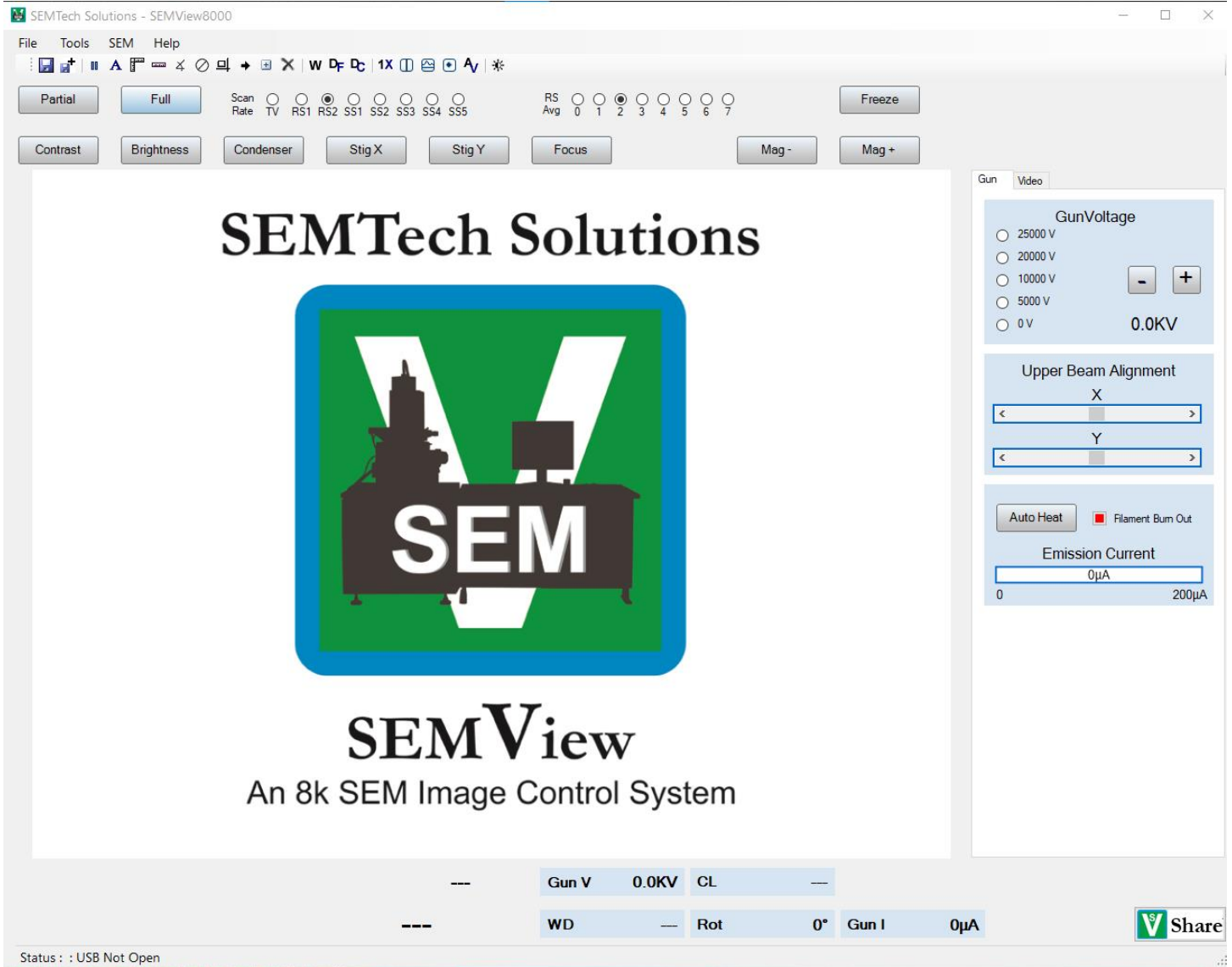


Figure 5: The SEMView 8000 has a well-organized and intuitive user interface

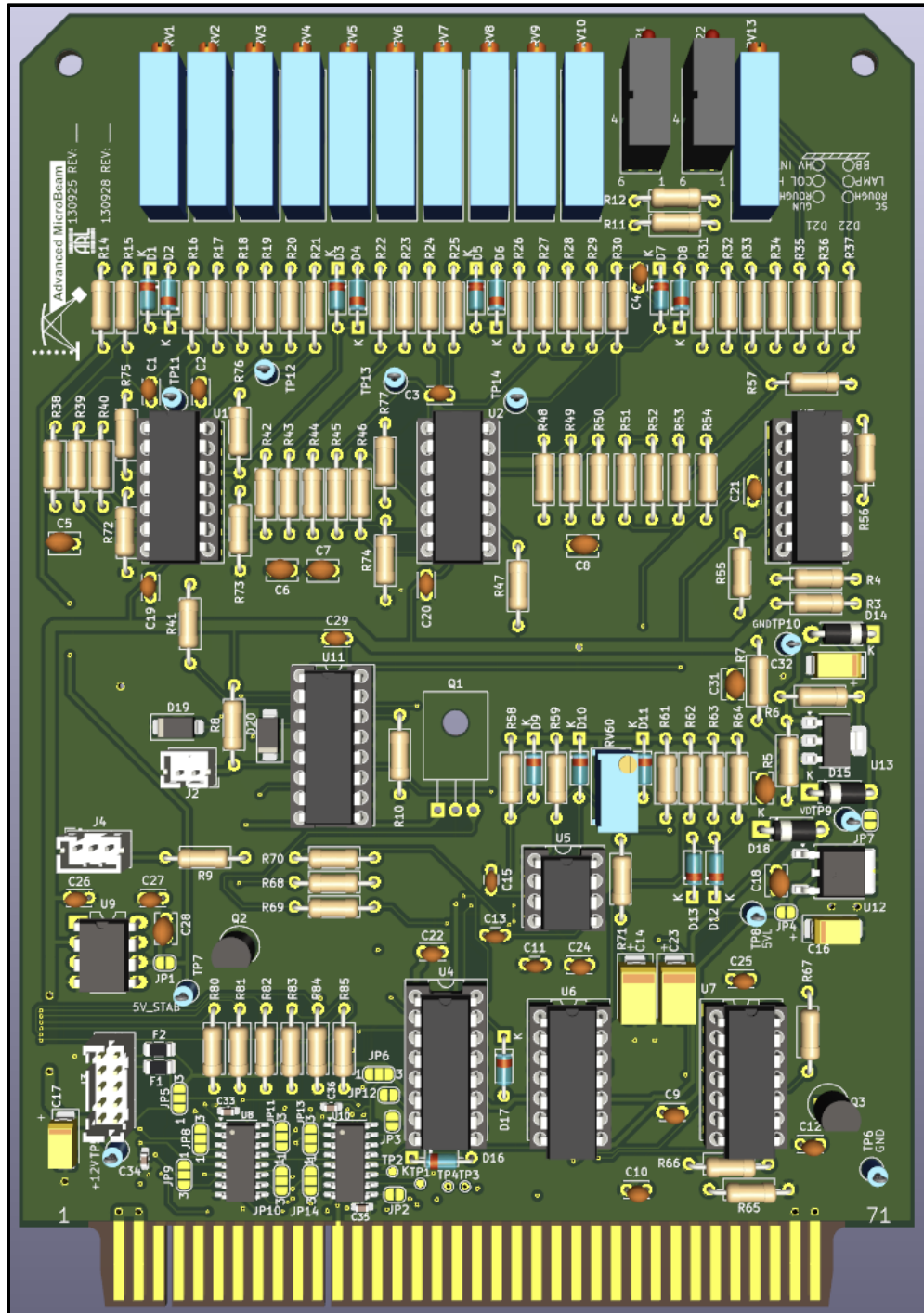


Figure 6: Custom Designed ARL-SEMView Vacuum Interlock Board

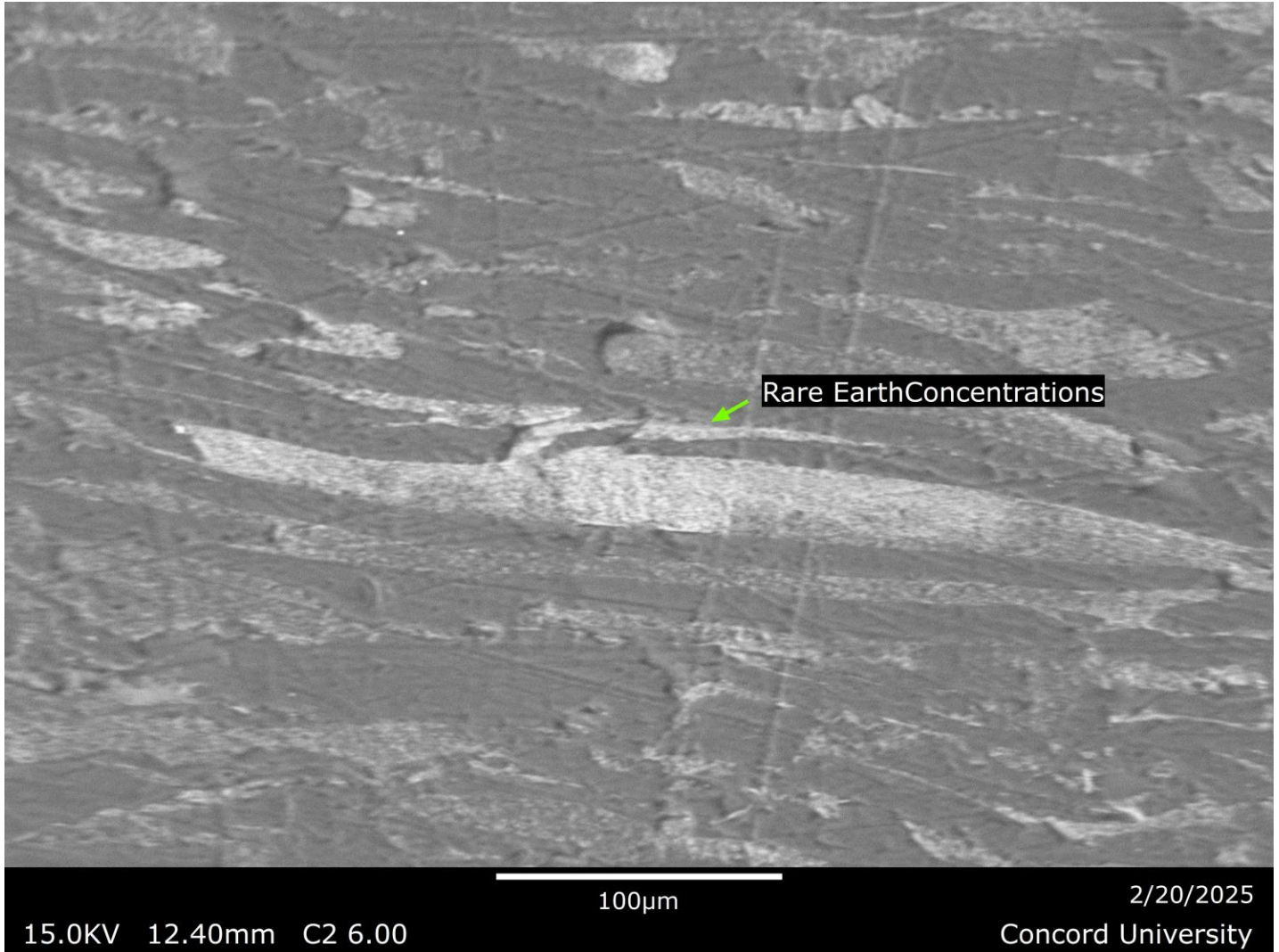


Figure 8: The SEMView can be calibrated to focus over the entire range of instrument working distances, providing the user with quick access to wider fields of view and improved search capabilities.

BSE image of rare earth concentrations in West Virginia coal at 12.4 mm working distance.

Working Distance Range for ARL Microprobe: 6.35 mm to 32 mm

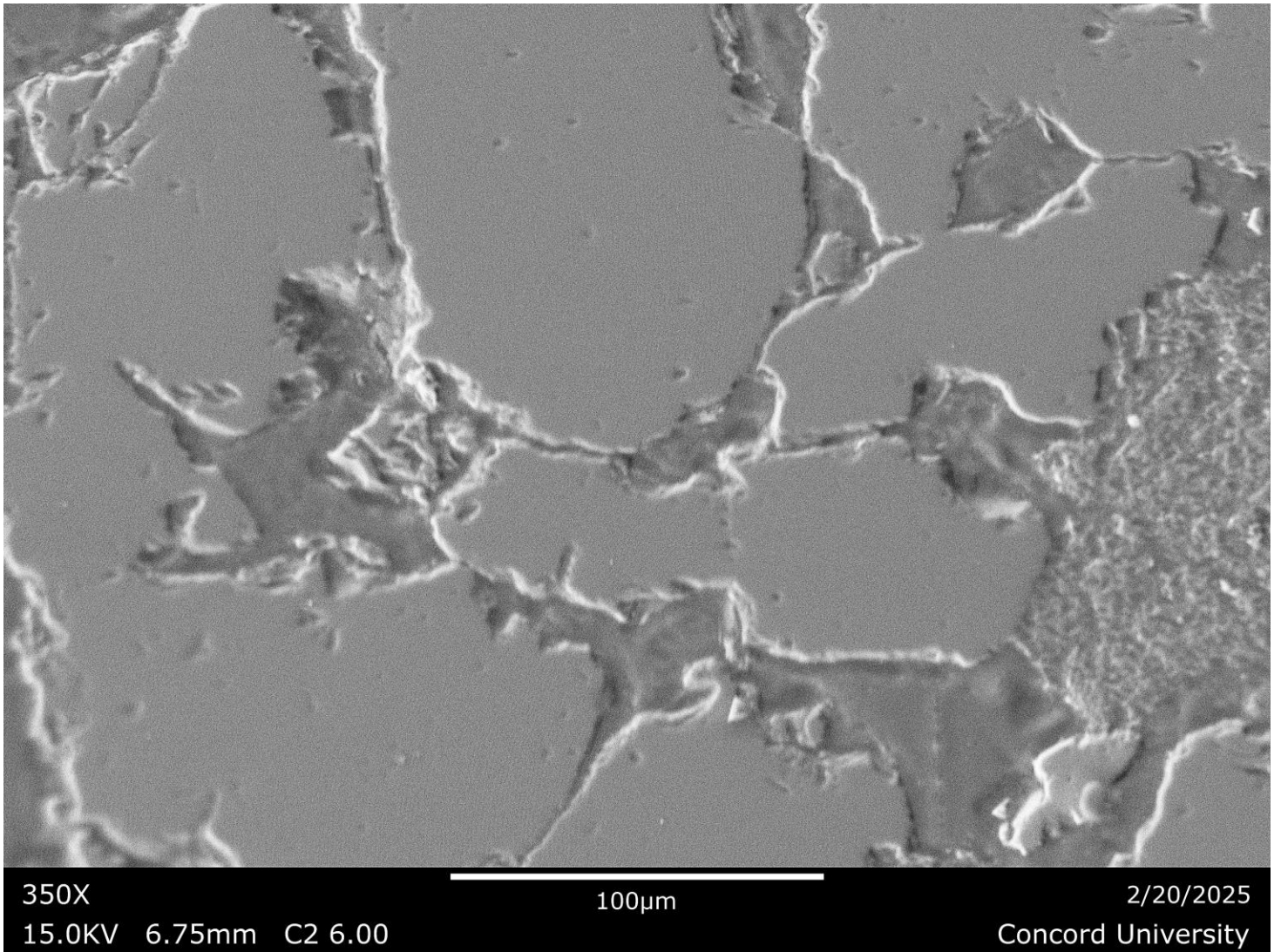


Figure 9: BSE Image of sandstone

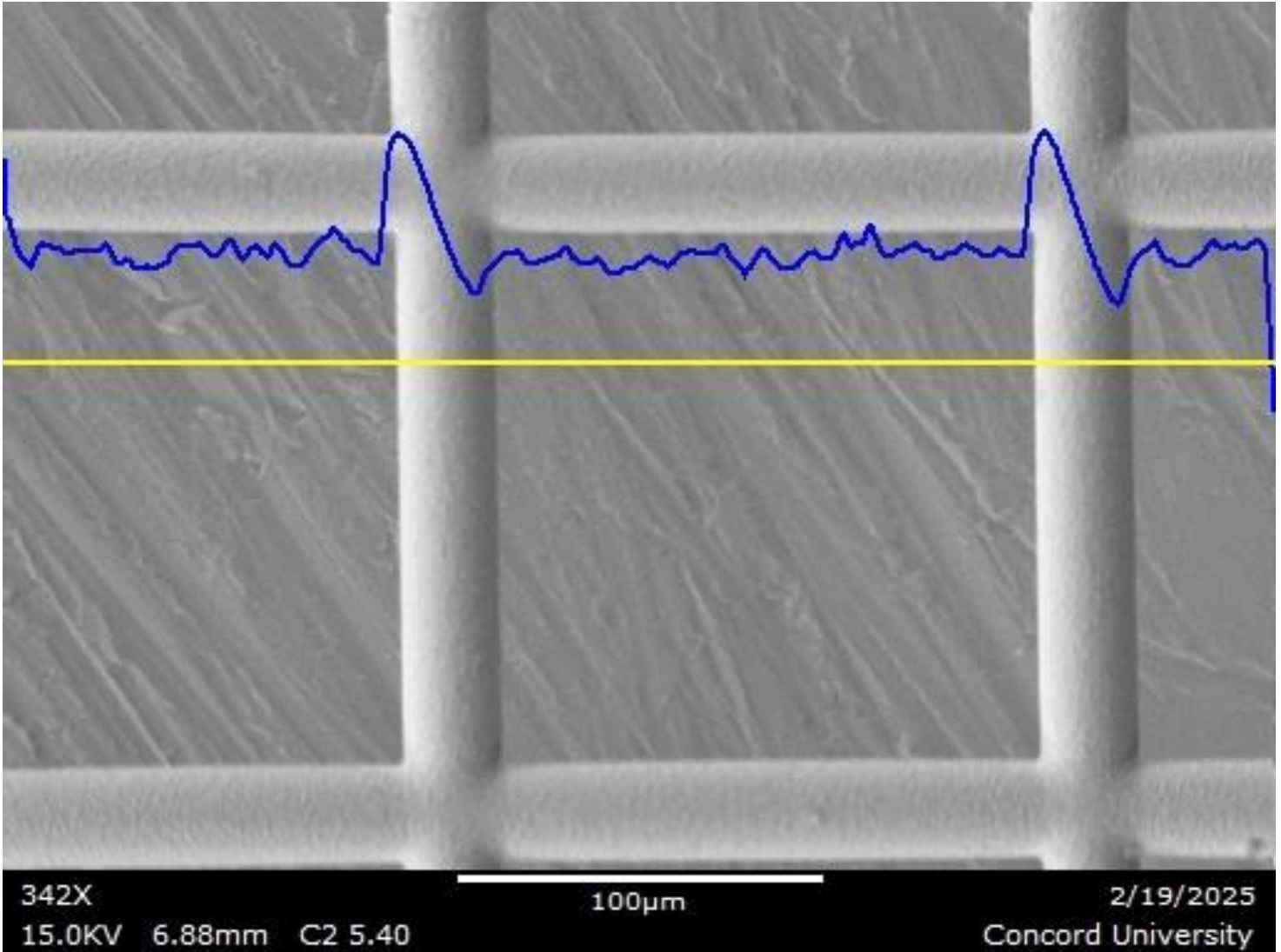


Figure 10: BSE Image of calibration grid in line scan mode

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