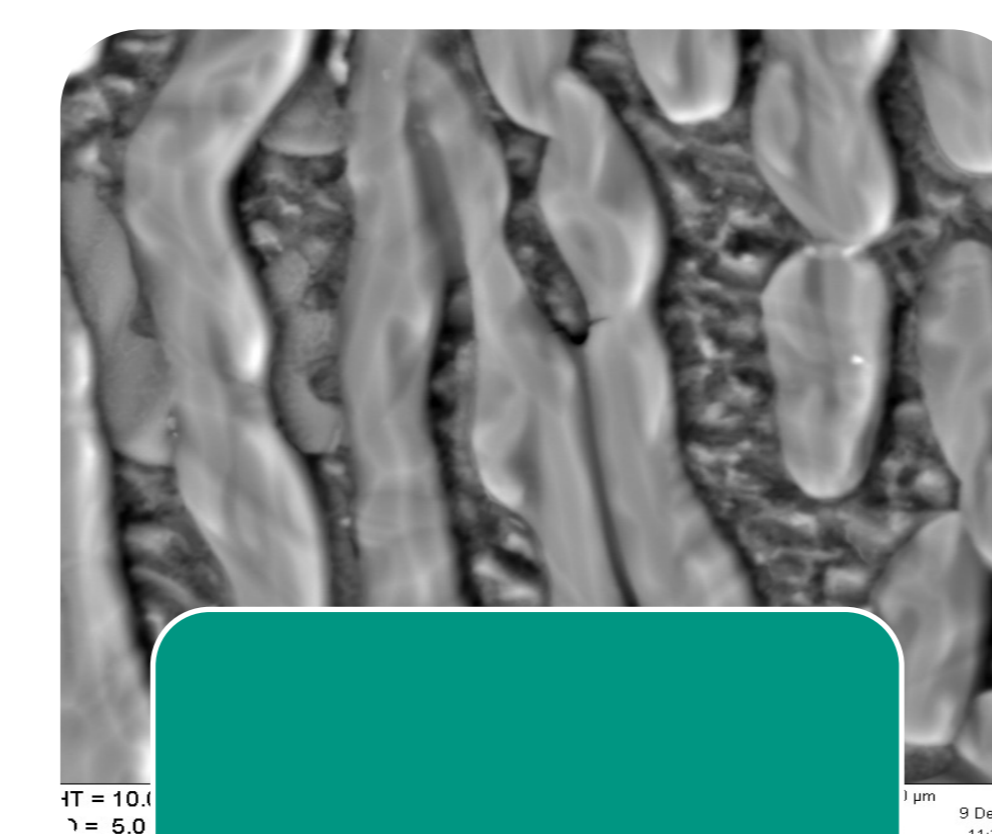
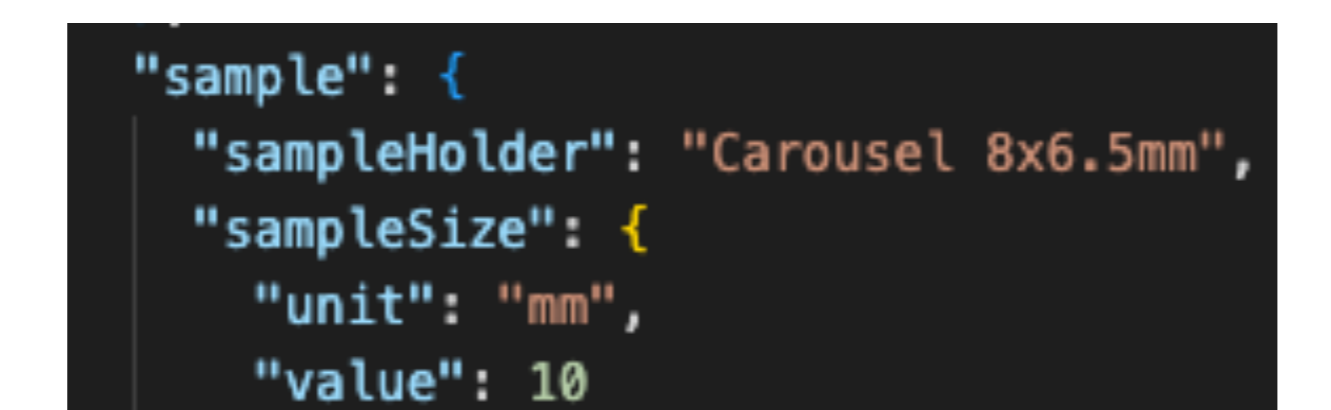
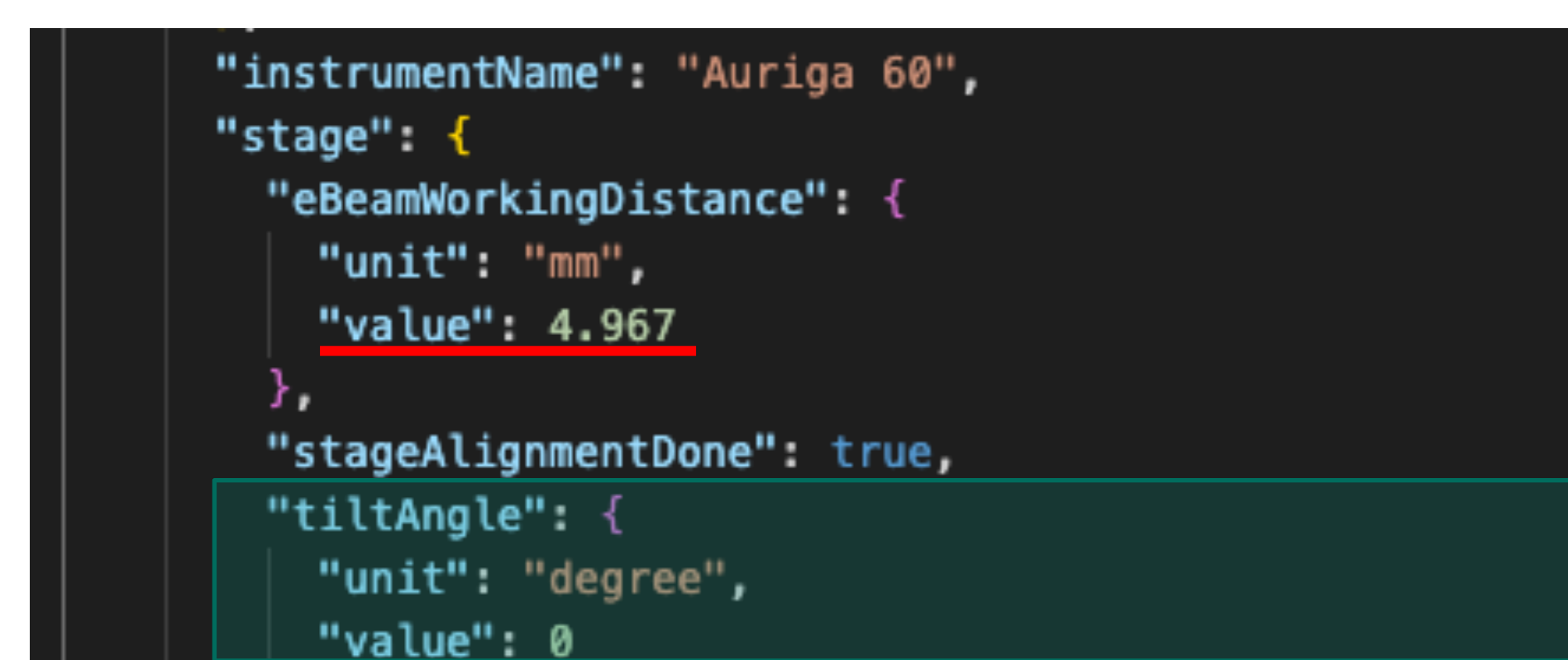
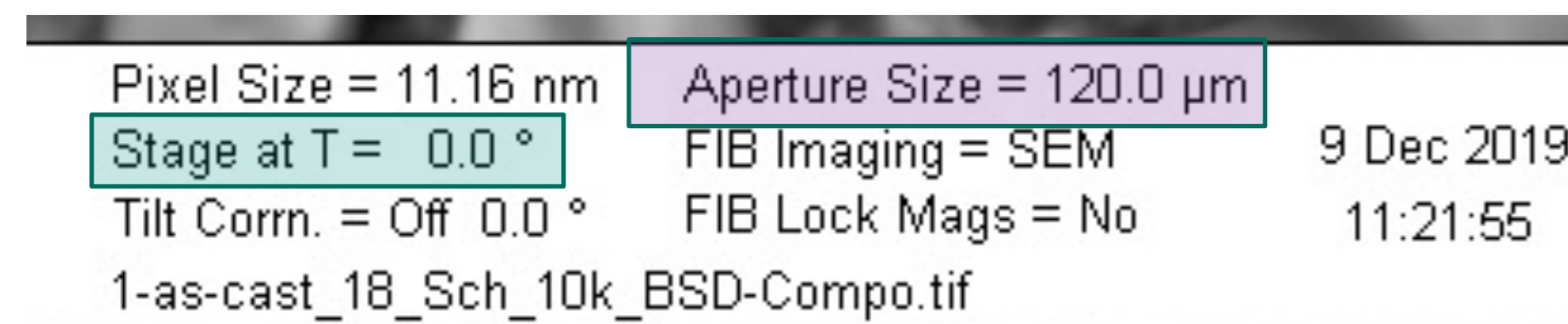
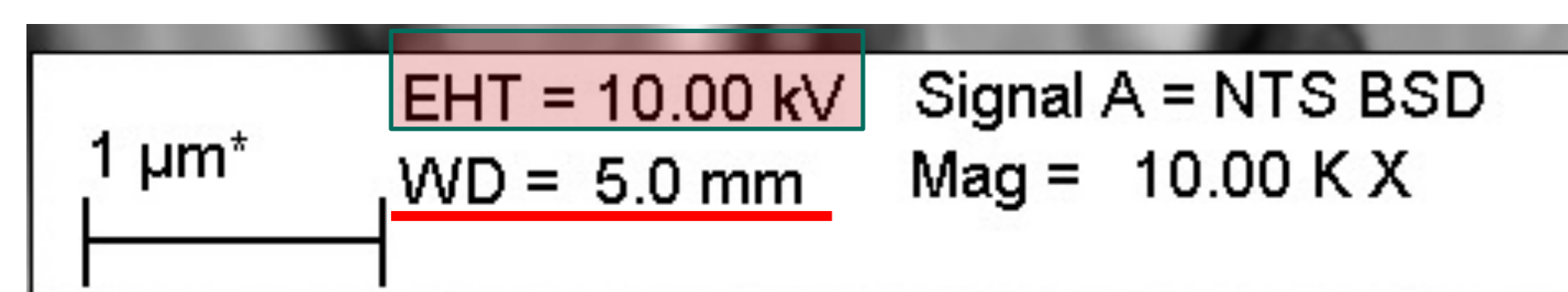


Scanning Electron Microscopy (SEM) - Metadata Extraction Tool and Schema Mapper

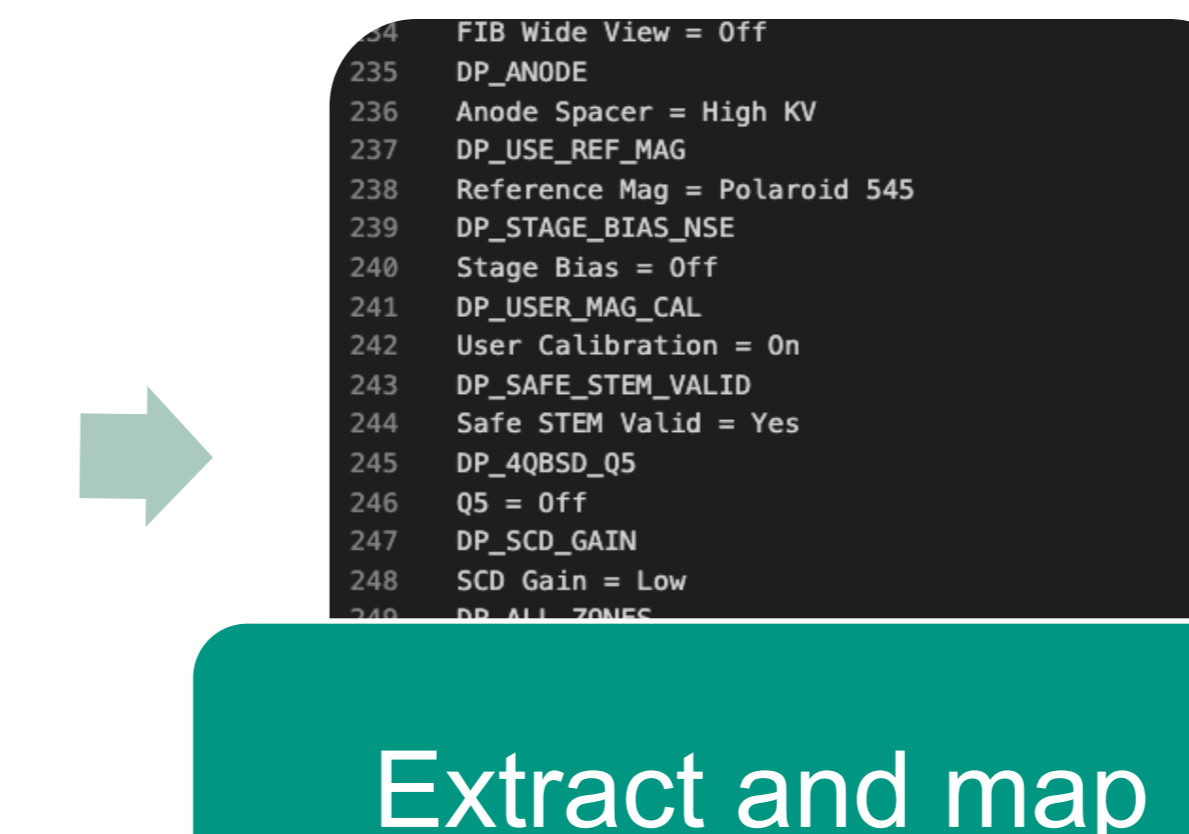
Metadata from SEM images mapped to a well-defined schema

Reetu Elza Joseph, Elias Giulio Georg Vitali, Rossella Aversa

The tool extracts metadata from TIFF images generated by Scanning Electron Microscopes (SEM) and maps the metadata to the published SEM schema* for use with Electronic Lab Notebooks (ELN) and repositories.



Load image



Extract and map metadata to the JSON schema*



Import metadata into ELN or custom interface



Upload metadata in a repository

Advantages

- Reduces the amount of manually inserted fields
- Can be integrated into ELNs or a custom interface can be used for reviewing / editing the metadata
- Facilitates FAIR principles and eases correlative characterization

Further Extensions

- The tool currently supports images from ZEISS SEM. Planned to be extended to other manufacturers and measurement techniques
- Authentication and Authorization Interface (AAI) integration is possible



SEM Mapping Tool GUI:
<https://metarepo.nffa.eu/mapping-service/showSchemes.html>

* <https://ceur-ws.org/Vol-3036/paper21.pdf>

Custom Interface for viewing SEM JSON metadata: <https://kit-data-manager.github.io/Metadata-Schemas-for-Materials-Science/>
GitHub Repository: <https://github.com/kit-data-manager/SEM-Mapping-Tool>