

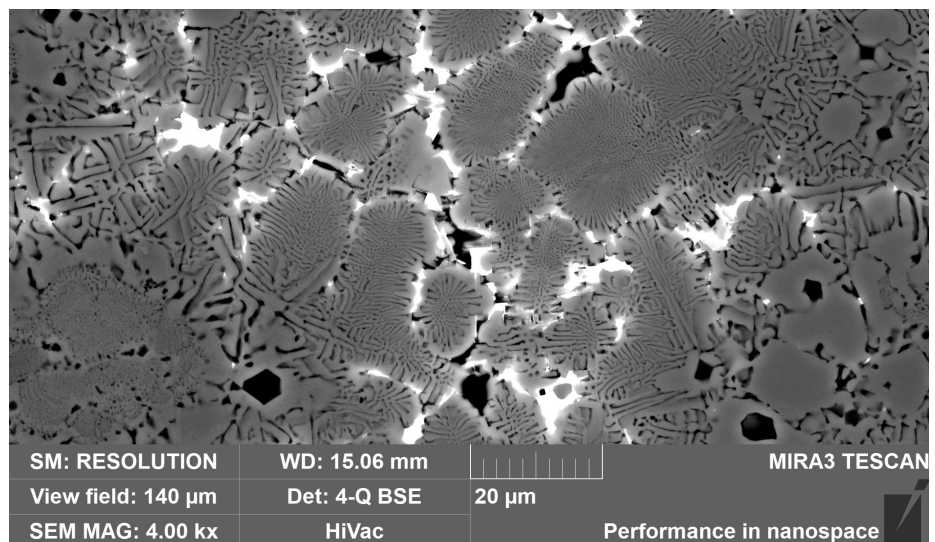
# FIELD EMISSION SCANNING ELECTRON MICROSCOPE WITH EBSD AND EDX

Tescan Mira 3

- Analysis of microstructure of light metals down to nano range
- Investigation of the local chemical composition, crystal structure and orientation of base material and intermetallic phases (EDX, EBSD)

## OUR SERVICES

- Metallographic investigations
- Damage analysis
- Phase identification
- Dispersoid quantification
- Texture analysis by EBSD



Backscattered electron image (BSE) of a quaternary aluminum alloy with very fine eutectic structures.



## TECHNICAL DATA

- **Manufacturer/Model:** Tescan Mira 3
- **Schottky electron emission source**  
(highest resolution)
- **Detectors:**
  - 4-quadrant solid-state backscatter electron detector
  - Everhart-Thornley detector
  - InLens secondary electron detector
  - Gatan OnPoint Backscatter electron detector for low acceleration voltages
  - EDAX Octane Elect EDX detector  
(energy dispersive X-ray spectroscopy, 70 mm<sup>2</sup> SDD)
  - Tescan Low vacuum secondary electron detector



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- **EDAX Velocity Super EBSD camera** (Electron backscatter diffraction with up to 4500 indexed points per second)

## PUBLICATIONS

- **Österreicher, J. A., Simson, C., Großalber, A., Frank, S., & Gneiger, S. (2021).** Spatial lithium quantification by backscattered electron microscopy coupled with energy-dispersive X-ray spectroscopy. *Scripta Materialia*, 194, 113664.
- **Österreicher, J. A., Grabner, F., Schiffel, A., Schwarz, S., & Bourret, G. R. (2018).** Information depth in backscattered electron microscopy of nanoparticles within a solid matrix. *Materials Characterization*, 138, 145-153.

With many years of experience in research and innovation for the lightweight design of the future, AIT's **LKR Leichtmetallkompetenzzentrum Ranshofen** is a leader in the development of high-quality light metal alloys, their sustainable processing through to the development of functionally integrated lightweight components and their recycling.

The LKR Leichtmetallkompetenzzentrum Ranshofen is characterized by an excellent team of scientists, the highest level of methodological expertise, and many years of experience in managing international research projects.

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