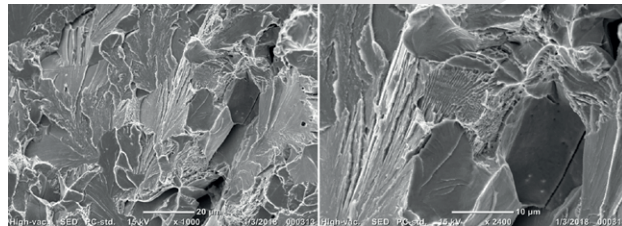
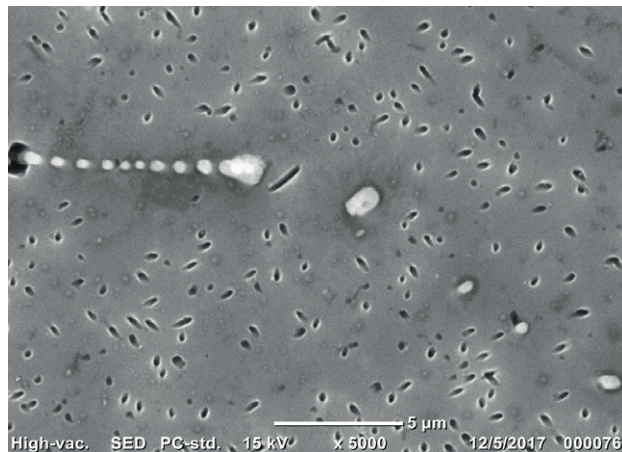


SEM Microstructural Characterization in the EN AW 6063 Aluminum Alloy Billet

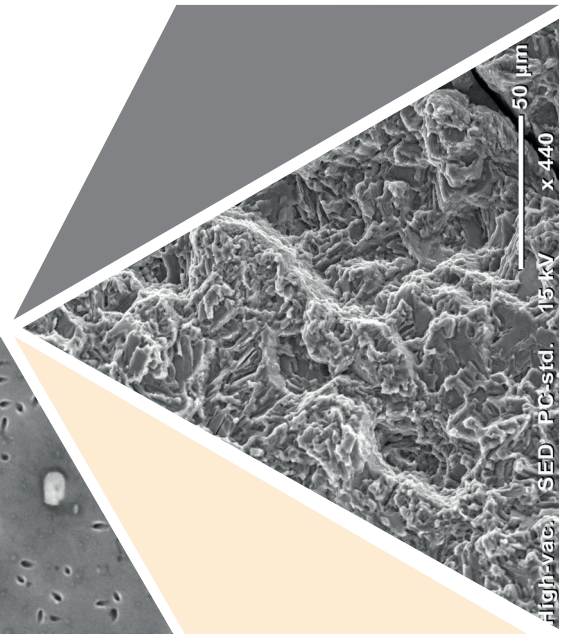


SEM Application in the Failure Analysis-Cleavage Fracture in the Steel Material



Typical Intermetallic Particles in EN AW 6063 Aluminum Alloy Billet [α -AlFeSi and Mg_2Si intermetallics]
Taken by JEOL JCM 6000 PLUS NeoScope BENCHTOP SEM

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TRI Metallurgy Company is serving material microstructure and failure analysis through its own laboratory with the technical consultancy in metallurgical processes, development of R & D projects (TUBITAK-TEYDEB, KOSGEB and Other National/International Research Funds) and investment consultancy services.

Laboratory Infrastructure;

Metallographic Analysis;

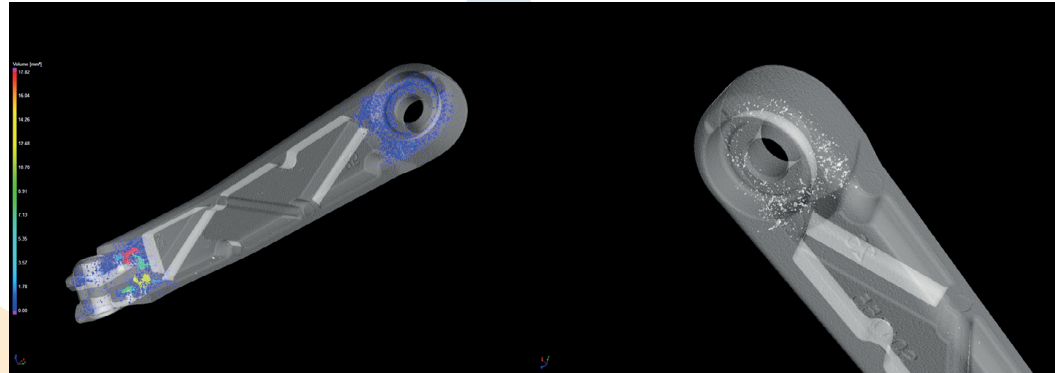
- Microstructure Characterization of Aluminum Cast and Billet alloys
- Microstructure of Steel and Cast Iron
- Copper and Titanium Microstructure Control, Grain Size Control

Failure Analysis;

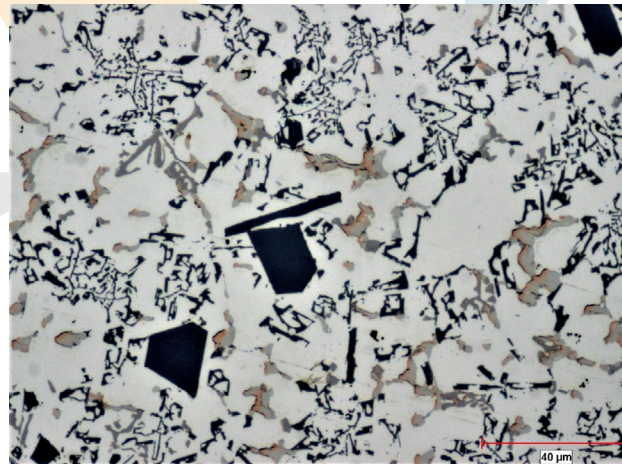
- Microstructure Characterization for Metallic and Non Metallic (Ceramic Materials) by Scanning Electron Microscope with a EDS Attachment.
- Fracture Analysis
- Wear Analysis
- Elemental Mapping for Seeing the Phase Ratio in the Different Material with SEM Application.

Porosity Analysis;

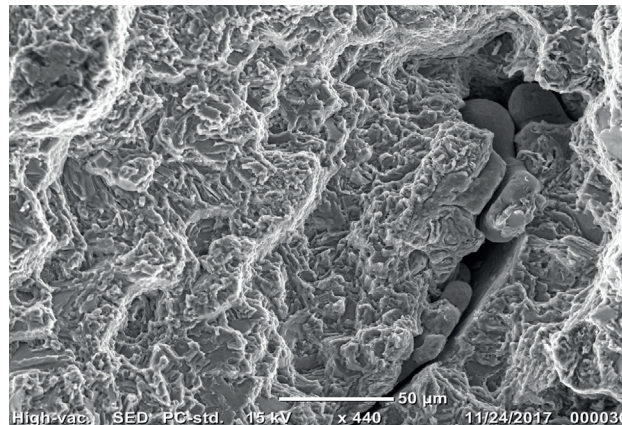
- With XRAY-CT system, it is possible to make detail analyze in aluminum casting materials, ceramics-based materials, non-metallic material groups (Plastics, Composites), welding, soldering and brazing joint control, Porosity distribution. Analysis can be performed without damage to the material to be tested during the control. However, there is a Dimensional Limitation for the XRAY CT Control



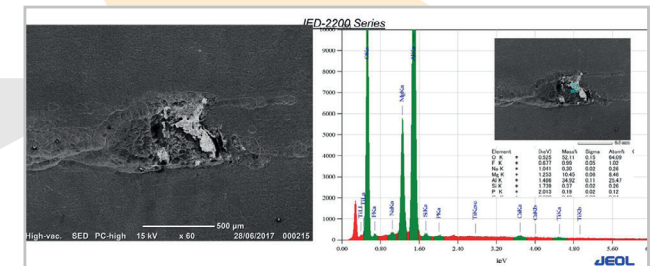
Porosity Control by XRAY-CT in aluminum parts produced by die casting method.



Aluminum Die Casting Microstructure

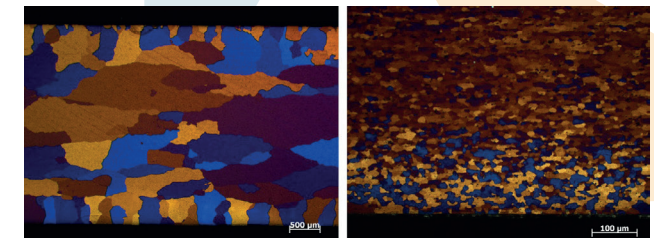


Fracture Failure in the Aluminum Die Cast Parts-Microshrinkage Defect in the Fracture Surface



Electron Microscope Studies: Easy Way for Defining the Root Cause in the Failure Analysis

Ex: Surface Problem Analysis in Aluminum Profile (EN AW 6063 Aluminum Alloy)- Spinel Phase Formation in the Surface of the Profile. Typical Aluminum Billet Casting Defect



Alloy Development Studies for Grain Size Control for the Extruded Profile: Polarized Optic Microscope Pictures for Understanding the Grain Formation in the Aluminum Profile (EN AW 6005A Aluminum Alloy).