

Order:

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ASPEx

TITLE: Imaging of Soil Particles: Size and Morphology Studies of Tephra

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Application Introduction

Secondary Electron Imaging (SED) and Backscatter Electron Imaging using the Variable Pressure mode (VP-BSED) can be used to evaluate shape and porosity of particulate material related to prehistoric events. Also known as volcanic ash, tephra can be used as temporal marker horizons in archaeological and geological sites. Tephra is mainly composed of silica, aluminum, sodium, iron, and other trace elements and can have a variety of shapes and textures.

Data Illustrations & Method Description

Microscopic analysis of tephra including, size and shape, can be used to trace volcanic eruptions. SED and VP-BSED Imaging were used to illustrate size the morphology of tephra particles.

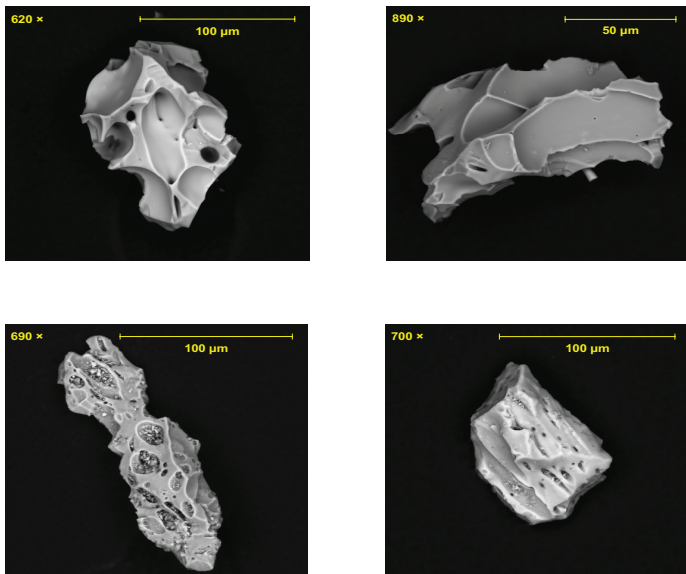


Figure 1: VP-BSED Images of tephra particles.
 Top: Hekla
 Bottom: Laacher

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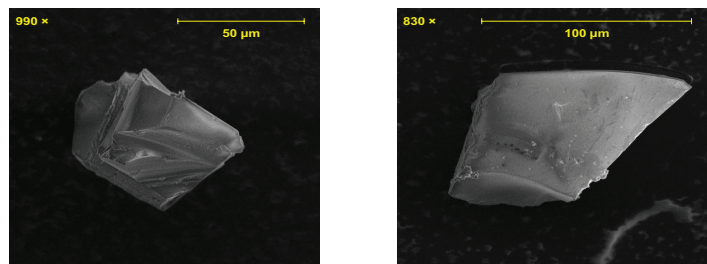


Figure 2: SED Images of Limba particles acquired at 5 keV.

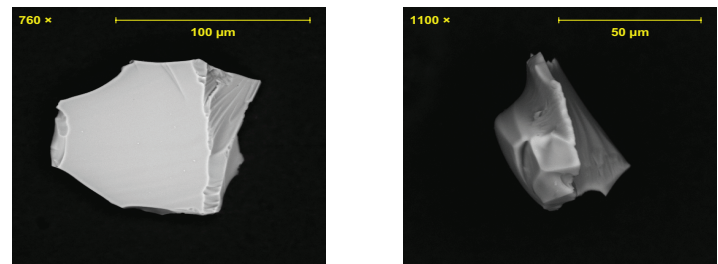


Figure 3: VP-BSED Images of Limba particles acquired at 25 keV.

Interested in resolving or illustrating surface features, elemental composition and or an unknown defect? Simply log on to www.aspexcorp.com and submit a specimen of your choice!

System Configuration

Product: PSEM® 3025 VP

Accelerating Voltage: 5 keV and 25 keV

Operating Parameters: SED and VP-BSED Detector

Working Distance: 11mm to 14 mm

Reporting Software: Personal Image Print™