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Exsolution and Al-Si disorder in alkali feldspars: Their analysis by infrared spectroscopy

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ABSTRACT

An experimental method for the determination of Ab-Or exsolution and Al-Si ordering in alkali feldspar is described. Powder infrared spectroscopy was used to measure spectra in the spectral range between 50 and 1500 cm^{-1} using about 5 mg of sample material. The spectra were analyzed using reference spectra of uniform samples with various Ab-Or compositions and several degrees of Al-Si order. The application of this method is demonstrated for two examples of exsolved feldspar minerals, and it is shown that detailed characterization of alkali feldspars using IR spectroscopy leads to new insight into their structual details.