Structure and properties of strontium aluminosilicate melts.

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Abstract

Alkaline-earth aluminosilicates are of both technological and scientific interest. In particular their properties make them attractive for a wide range of industrial applications. In geosciences, they are of fundamental importance as they form a significant fraction of the composition of geological magmas.
Among these systems, strontium aluminosilicates (SAS) are interesting composition for making glass ceramics or transparent ceramics [1]. However, due to their relatively high melting point, only a few structural studies at high temperature exist on this system and the thermophysical properties are almost unknown despite their importance for understanding the glass formation.

In this talk, I will present a structural study of various liquid SAS compositions performed using aerodynamic levitation and laser heating. Results will be also correlated to previous studies [2] and to thermophysical properties determined using the oscillating drop method [3].

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