

# VitroGeoWaste III

## Synthesis and structure of glass-ceramic foam materials from metallurgical waste slag

Oral presentation  / Poster presentation

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**Abstract:** The possibility to produce glass-ceramic foams using metallurgical slag is discussed. The effect of CaF<sub>2</sub> addition on the glass melting, the densification and the foaming is also studied. The sintering and the bloating trends are evaluated by hot stage microscopy technique (HSM). The structure of obtained samples is studied with scanning electron microscopy (SEM) and with computed tomography (CT).

The results demonstrate intensive bloating of the sintered samples in the range 1050-1150°C.

The addition of CaF<sub>2</sub> amount in the glass batches leads to a notable decrease of both melting and sintering temperatures, as well as to some increase of the crystallinity. As a result glass-ceramic foams with closed porosity of about 80 vol. % can be synthesized using glass powders with modest addition of CaF<sub>2</sub> by applying higher heating rates and holding temperatures of 1100-1150 °C.

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