

Supplementary Information

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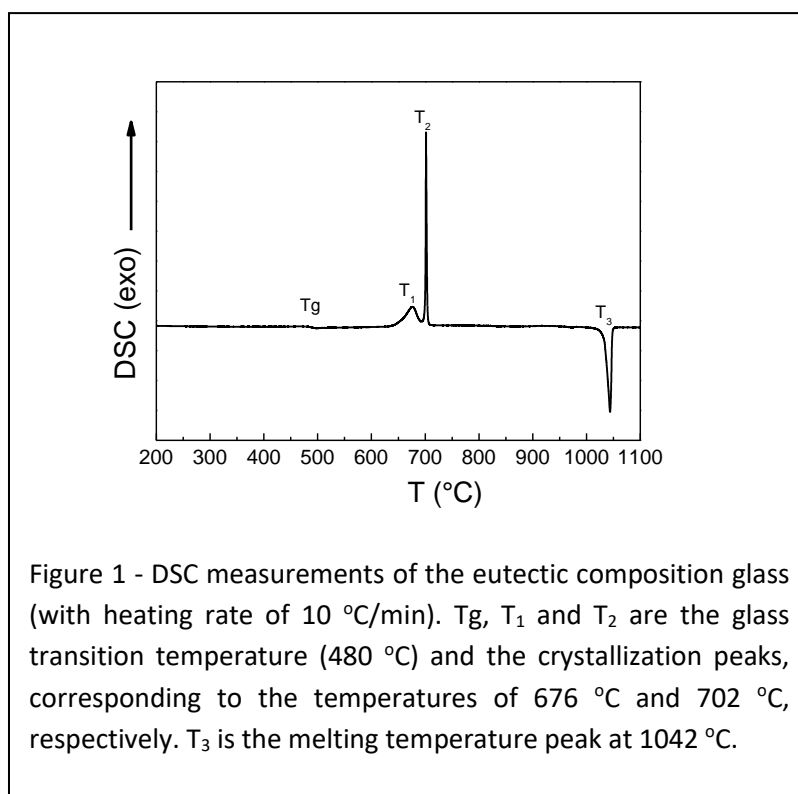
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Title: " Laser-heated crystallization of eutectic composition glass"

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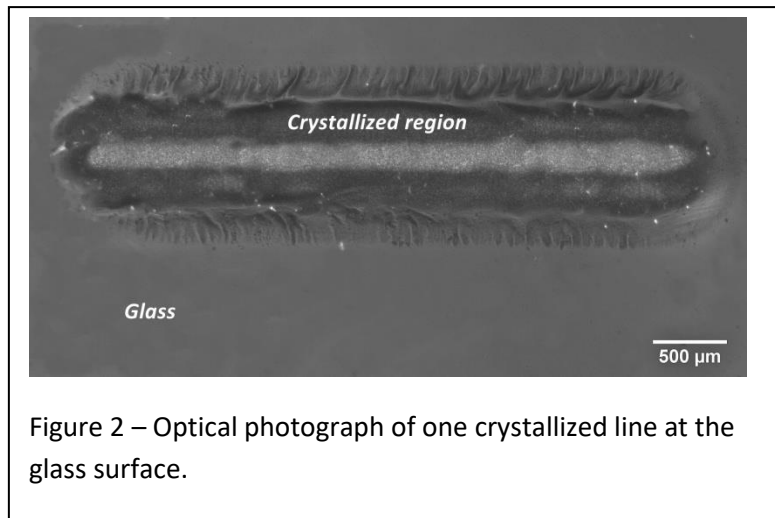
1) Differential Scanning Calorimetry (DSC)

The DSC curve of the glass is shown in figure 1.

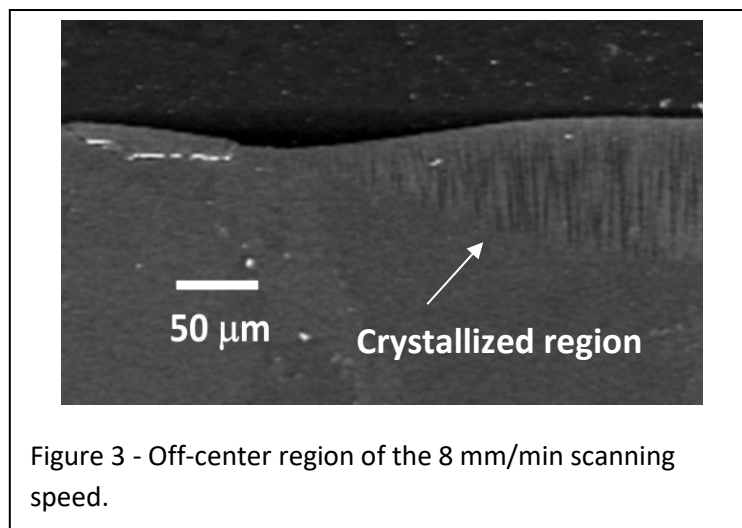


The DSC measurement for this compound was extensively studied by Fokin et al.¹, which have shown that even at the eutectic composition, there are 2 crystallization peaks. This is not expected for an eutectic composition system. However, due to the highest diffusion of lithium ions within the glass matrix, the Li₂SiO₃ crystallizes first, followed by the CaSiO₃ + Li₂SiO₃ crystallization. Another evidence for the eutectic composition is that only one melting point is observed.

2) Optical photograph of the line surface:



3) Off-center image from the crystallized region:



In figure 3, It can be seen the edge of the crystallization process. In this work we extract the data on the average interphase spacing from the central part of the crystallized region. However, it is possible to verify that even at the edges of the crystallized line cross-section (figure 2a of the manuscript - for scanned at speed of 8 mm/min) the microstructure is the same as in the central region.

References:

- 1 V. M. Fokin, R. M. C. V. Reis, A. S. Abyzov, C. R. Chinaglia and E. D. Zanotto, *J. Non. Cryst. Solids*, 2013, **362**, 56–64.