

Topic: Transformation kinetics of glass forming systems

In my work, the mechanisms controlling nucleation processes in non-equilibrium conditions of binary and glass forming metallic melts are studied, with focus on their chemistry dependency.

It is known that glass forming ability of alloys depends on alloy concentration, which is often explained within a thermodynamical frame. From the point of view of nucleation, crystallization is controlled by the solid-liquid interface and atomic attachment rate in the undercooled melt. Since glass formation is only possible if crystallization is completely bypassed, nucleation parameters and their link to glass formation are a topic of interest.

Using calorimetric data, I statistically analyze nucleation events in a glass forming system within and beyond its glass forming region. The aim of the project is to obtain a link between nucleation and other melt properties of the two regions.