

Supplementary information

Depletion of two-level systems in highly stable glasses with different molecular ordering

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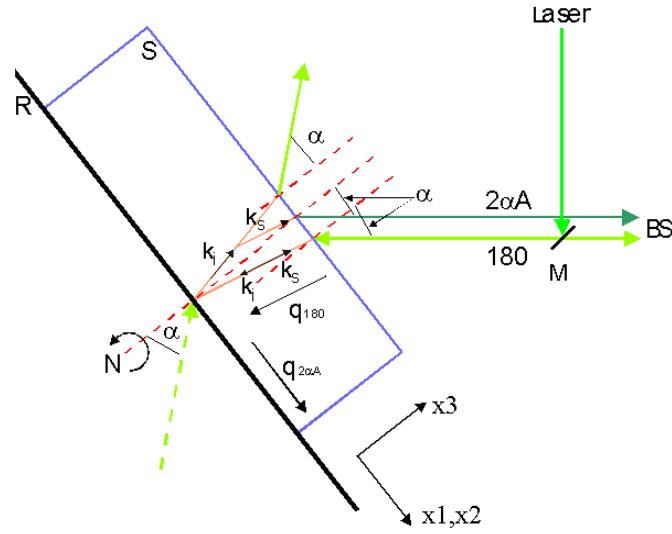
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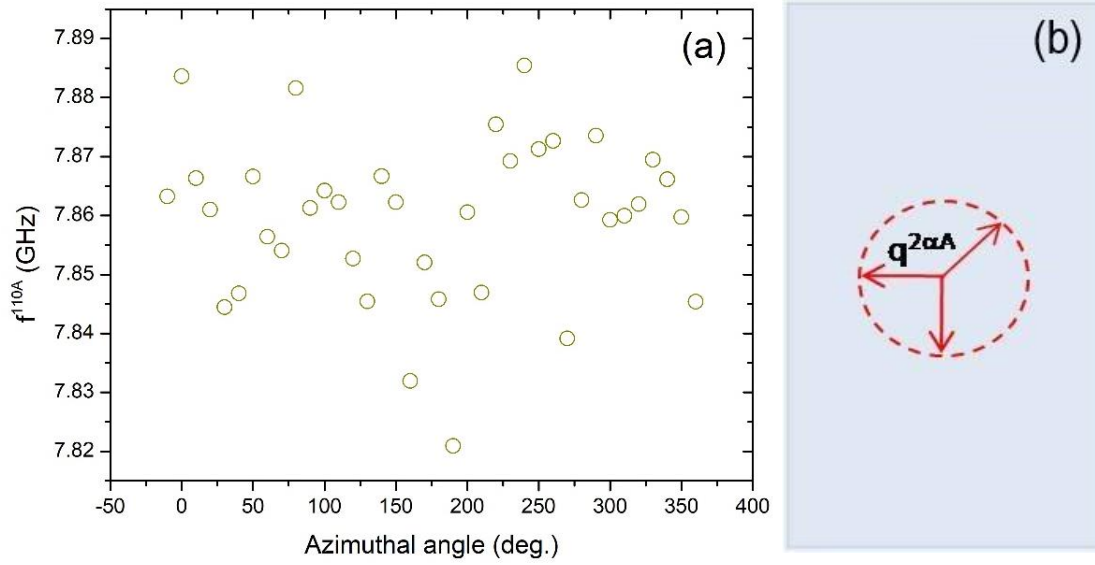
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Index of Supplementary information:

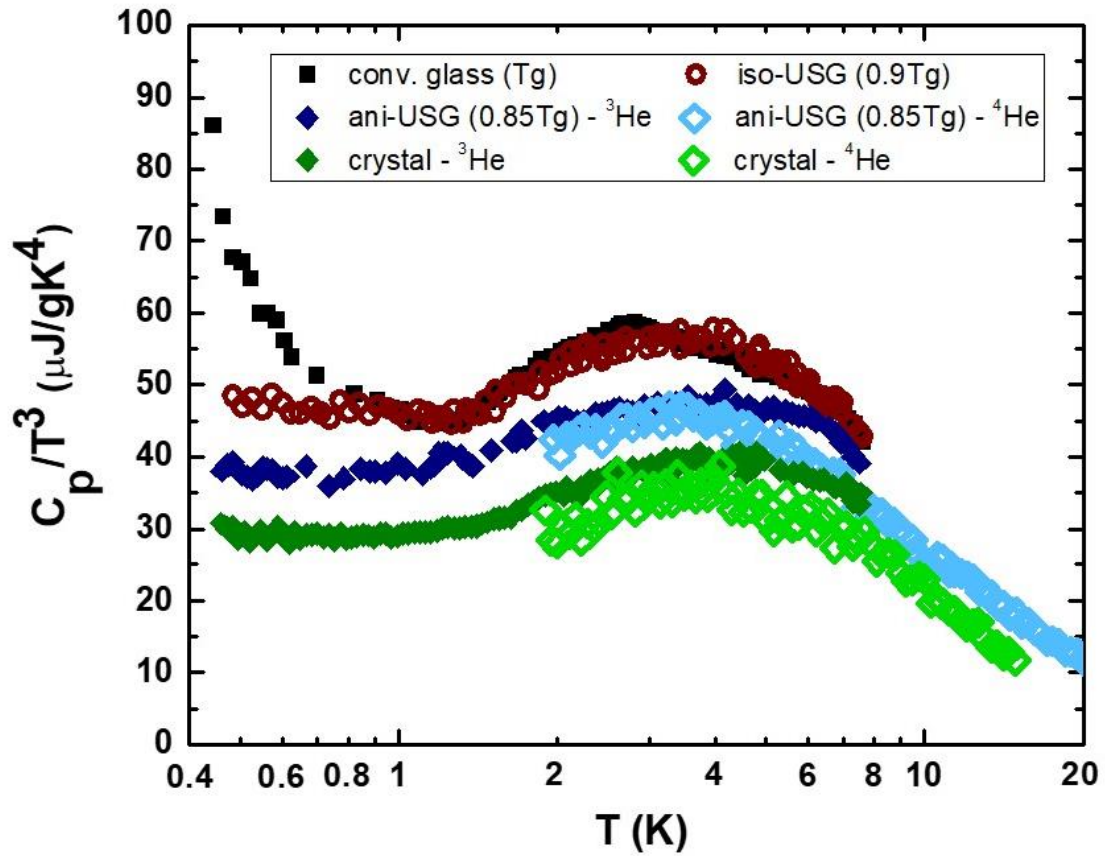
- **Supplementary Figure 1: Schematics of the scattering set up employed in the HRBS experiments.**
- **Supplementary Figure 2: Check of the possible angular dependence of the Brillouin peak.**
- **Supplementary Figure 3: Raw specific heat data before statistical averaging, using two different cryostats.**



Supplementary Figure 1. Schematics of the scattering set up employed in the HRBS experiments. In this scattering set up there are two scattering geometries appearing simultaneously, the pure backscattering (180°) and the $2\alpha A$ scattering geometry. M: mirror. S: film sample. R: Reflecting substrate (Si). N: normal to the substrate/sample plane and axis of rotation. k_i and k_s are the incident and scattered laser wave vectors, respectively. q^{180} and $q^{2\alpha A}$ are the corresponding acoustic wave vectors.



Supplementary Figure 2. Check of the possible angular dependence of the Brillouin peak. (a) Angular dependence of the Brillouin frequency shift within the sample plane for the sample grown at 0.9 T_g . (b) Schematics of the effective rotation direction of the acoustic wave vector and its changing position relative to the sample edges.



Supplementary Figure 3. Raw specific heat data before statistical averaging, using two different cryostats. Total set of raw datapoints obtained in different experimental runs for the different samples, as indicated in the legend and following the notation in the main text, after subtraction of the corresponding addenda. It should be noted that the addenda used in the two experiments within the ^4He cryostat is different from that used in the ^3He cryostat, even with a different thermal sensor attached. Despite so many variations in the experimental conditions, the use of different samples, and the fact that the addenda contributions are significant, the agreement between different curves are reasonably good, exhibiting only a small systematic error factor in the absolute values. All C_p data shown and analysed in the main text are the result of a smooth statistical average of the whole of the data points available. Error bars are of the order of the data points size.